LAMPIRAN

1. Surat Menyurat
2. Tabel Momen pada Plat
3. Tabel Koefisien Tahanan (k)
4. Tabel Spesifikasi Fender Karet Briggestone Sube Arch Type V
5. Perhitungan Struktur (SAP 90)

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Badan Hukum : Yayasan Sandjojo

Nomor : A.48.04/014 /UKS.04.2/VIII/1996 15 Agustus 1996
Lamp : 1 (satu)lembar
H a l : **MOHON TUGAS AKHIR**

Kepada : Yth. Bapak. Ir. Budi Setiyadi, MT.
Asisten Pembimbing Tugas Akhir
Bagi Mahasiswa Jurusan Teknik Sipil
Unika Soegijapranata
S E M A R A N G.

Kami beritahukan dengan hormat, bahwa pada Semester Gasal 1996/1997 ada beberapa Mahasiswa Jurusan Teknik Sipil Fakultas Teknik Unika Soegijapranata Semarang yang berhak mendapatkan Tugas Akhir / Desain.

Sehubungan dengan hal tersebut di atas, maka kami mohon kesediaan Bapak berkenan memberikan Tugas Akhir/Desain bagi mahasiswa terlampir.

Kami beritahukan pula bahwa, penyelesaian tugas dalam waktu 3 (tiga) bulan mulai tugas keluar (diberi tugas). Apabila tidak selesai dapat diperpanjang maximal 3 (tiga) bulan, selebihnya dianggap gugur.

Demikian pemberitahuan kami, atas perhatian dan kerjasama Bapak, diucapkan terimakasih.

Ketua Panitia

FAKULTAS TEKNIK JURUSAN TEKNIK SIPIL

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A.48.04/-?/UKS.04.2/VIII/1996
TANGGAL : 15 AGUSTUS 1996

NO	NIM / NIRM	NAMA	JUDUL LAPORAN KERJA PRAKTEK	DOSEN PEMBIMBING
IV	88.673 88.6.111.03010.50398	UNTUNG SANTOSO	PEMBANGUNAN GEDUNG KANTOR PLN PROYEK INDUK PEMBANGKIT DAN JARINGAN JAWA TENGAH.	PEMBIMBING UTAMA : IR. IGN. DARMOYO
	88.675 88.6.111.03010.50399	TANKIAN HIEN	PEMBANGUNAN GEDUNG GUNA BANK JALAN JENDRAL SUDIRMAN NO 1, SALATIGA.	ASISTEN PEMBIMBING : IR. KIKI SAPTONO, MT
V	91.12.862 91.6.111.03010.50040	ROBERT IRAWAN	PROYEK PEMBANGUNAN GEDUNG HOTEL NOVOTEL SURAKARTA	PEMBIMBING UTAMA : IR. DAVID WIDIANTO, MT
	91.12.912 91.6.111.03010.50085	BENNY WIJAYA SUSILO	PROYEK PEMBANGUNAN GEDUNG FAKULTAS EKSAKTA UNIT A UNIKA SOEGIJAPRANATA SEMARANG.	ASISTEN PEMBIMBING : IR. WIDIJA SUSENO, MT
VI	91.12.884 91.6.111.03010.50057	EPIFANA RINI KUSUMAWATI	PROYEK PEMBANGUNAN PABRIK TEPUNG PT SRIBOGA RATU RAYA.	PEMBIMBING UTAMA : PROF. IR. SOEDIRO
	91.12.830 91.6.111.03010.50015	DIDIK SETYANTO	PROYEK PEMBANGUNAN JEMBATAN SENDANGMULYA TEMBALANG SEMARANG	ASISTEN PEMBIMBING : IR. BUDI SETYADI, MT

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Badan Hukum : Yayasan Sandjojo

Nomor : A.48.04/094 /UKS.04.2/VIII/1996 15 Agustus 1996
Lamp : 1 (satu)lembar
H a l : **MOHON TUGAS AKHIR**

Kepada : Yth. Bapak. Prof. Ir. Soediro.
Dosen Pembimbing Tugas Akhir
Bagi Mahasiswa Jurusan Teknik Sipil
Unika Soegijapranata
S E M A R A N G.

Kami beritahukan dengan hormat, bahwa pada Semester Gasal 1996/1997 ada beberapa Mahasiswa Jurusan Teknik Sipil Fakultas Teknik Unika Soegijapranata Semarang yang berhak mendapatkan Tugas Akhir / Desain.

Sehubungan dengan hal tersebut di atas, maka kami mohon kesediaan Bapak berkenan memberikan Tugas Akhir/Desain bagi mahasiswa terlampir.

Kami beritahukan pula bahwa, penyelesaian tugas dalam waktu 3 (tiga) bulan mulai tugas keluar (diberi tugas). Apabila tidak selesai dapat diperpanjang maximal 3 (tiga) bulan, selebihnya tugas akhir dianggap gugur.

Demikian pemberitahuan kami, atas perhatian dan kerjasama Bapak diucapkan terima kasih.

Ketua Panitia

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- Yth. Sdr. Dekan Fakultas Teknik
- Yth, Sdr. Ka. BAAK

DAFTAR MAHASISWA YANG BERHAK MENDAPAT TUGAS AKHIR
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JURUSAN TEKNIK SIPIL FAKULTAS TEKNIK UNIKA SOEGIJAPRANATA SEMARANG

A.45.04/3/UKS.04.2/VIII/1996
TANGGAL : 15 AGUSTUS 1996

NO	N I M N I R M	N A M A	JUDUL LAPORAN KERJA PRAKTEK	DOSEN PEMBIMBING
IV	88.673 88.6.111.03010.50398 88.675 88.6.111.03010.50399	UNTUNG SANTOSO TANKIAN HIEI	PEMBANGUNAN GEDUNG KANTOR PLN PROYEK INDUK PEMBANGKIT DAN JARINGAN JAWA TENGAH. PEMBANGUNAN GEDUNG GUNA BANK JALAN JENDRAL SUDIRMAN NO 1, SALATIGA.	PEMBIMBING UTAMA : IR. IGN. DARMOYO ASISTEN PEMBIMBING : IR. KIKI SAPTONO, MT
V	91.12.862 91.6.111.03010.50040 91.12.912 91.6.111.03010.50065	ROBERT IRAWAN BENNY WIJAYA SUSILO	PROYEK PEMBANGUNAN GEDUNG HOTEL NOVOTEL SURAKARTA PROYEK PEMBANGUNAN GEDUNG FAKULTAS EKSAKTA UNIT A UNIKA SOEGIJAPRANATA SEMARANG.	PEMBIMBING UTAMA : IR. DAVID WIDIANTO, MT ASISTEN PEMBIMBING : IR. WIDIJA SUSENO, MT
VI	91.12.884 91.6.111.03010.50057 91.12.830 91.6.111.03010.50015	EPIFANA RINI KUSUMAWATI DIDIK SETYANTO	PROYEK PEMBANGUNAN PABRIK TEPUNG PT SRIBOGA RATU RAYA. PROYEK PEMBANGUNAN JEMBATAN SENDANGMULYA TEMBALANG SEMARANG	PEMBIMBING UTAMA : PROF.IR.SOEDIRO ASISTEN PEMBIMBING : IR. BUDI SETIYADI, MT

SEMARANG, 15 AGUSTUS 1996
KETUA PANITIA,

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FAKULTAS TEKNIK

JURUSAN SIPIL

UNIVERSITAS KATOLIK SOEGIJAPRANATA SEMARANG

KARTU ASISTENSI

Nama	: Diclik. S / Epifana RK	NIM	: 91.12.830 / 884
MT. Kuliah	: TA	Semester	:
Dosen	: Prof IR Soedíro	Ds. Wali	: Budi Setiadi, MT / IR Noerjoto
Asisten	: IR Budi Setiadi MT		
Dimulai	:		
Selesai	:	Nilai	:

NO.	TANGGAL	KETERANGAN	PARAP
1	25-9-1996	Perbaiki Daftar isi	
2.	11-10-1996	Notasi ½ ditaktulkan	
3.	2-12-1996	Lanjutkan	
4.	21.-12-1996	RAB dicheck	
5.	18-3-1997	Perancangan & RAB	
6	24-3-1997	Dermaga saja dirancang dng kapal	
7	4-4-1997	RAB ditaktulkan	
8	10-4-1997	Bisa dibukukan	

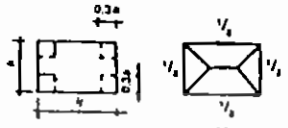
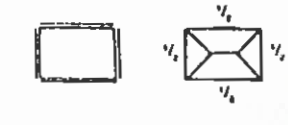
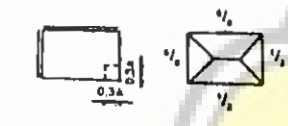
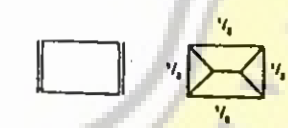
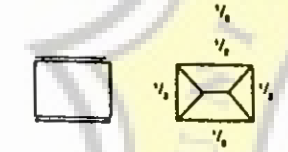
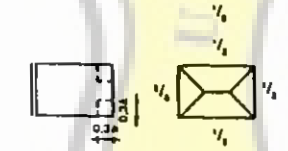
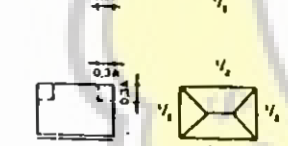
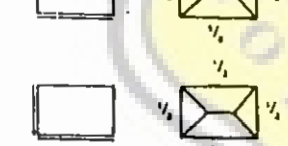
Semarang, :.....

Dosen / Asisten

(.....)

4.2.b Pelat – Umum

Tabel Momen yang menentukan per meter lebar dalam jalur tengah pada pelat dua arah akibat beban terbagi

Skema	Penyaluran beban berdasarkan 'metode amplop' kali $w_{u\ lantai} \cdot l_x$	Momen per meter lebar	$\frac{l_y}{l_x}$ 1,0	1,2	1,4	1,6	1,8	2,0	2,5	3,0
I		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	41	54	67	79	87	97	110	117
		$m_{ly} = 0{,}001$	41	35	31	28	26	25	24	23
		$m_{tx} = \frac{1}{2} m_{lx}$								
		$m_{ty} = \frac{1}{2} m_{ly}$								
II		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	25	34	42	49	53	58	62	65
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	25	22	18	15	15	15	14	14
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	51	63	72	78	81	82	83	83
		$m_{ty} = -0{,}001\ w_u l_x^2\ x$	51	54	55	54	54	53	51	49
III		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	30	41	52	61	67	72	80	83
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	30	27	23	22	20	19	19	19
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	68	84	97	106	113	117	122	124
		$m_{ty} = -0{,}001\ w_u l_x^2\ x$	68	74	77	77	77	76	73	71
		$m_{tx} = \frac{1}{2} m_{lx}$								
		$m_{ty} = \frac{1}{2} m_{ly}$								
IV		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	24	36	49	63	74	85	103	113
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	33	33	32	29	27	24	21	20
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	69	85	97	105	110	112	112	112
		$m_{ty} = \frac{1}{2} m_{lx}$								
V		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	33	40	47	52	55	58	62	65
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	24	20	18	17	17	17	16	16
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	69	76	80	82	83	83	83	83
		$m_{ty} = \frac{1}{2} m_{lx}$								
VI		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	31	45	58	71	81	91	106	115
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	39	37	34	30	27	25	24	23
		$m_{ty} = -0{,}001\ w_u l_x^2\ x$	91	102	108	111	113	114	114	114
		$m_{tx} = \frac{1}{2} m_{lx}$								
		$m_{ty} = \frac{1}{2} m_{ly}$								
VII		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	39	47	57	64	70	75	81	84
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	31	25	23	21	20	19	19	19
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	91	98	107	113	118	120	124	124
		$m_{tx} = \frac{1}{2} m_{lx}$								
		$m_{ty} = \frac{1}{2} m_{ly}$								
VIII		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	25	36	47	57	64	70	79	83
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	28	27	23	20	18	17	16	16
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	54	72	88	100	108	114	121	124
		$m_{ty} = -0{,}001\ w_u l_x^2\ x$	60	69	74	76	76	76	73	71
		$m_{tx} = \frac{1}{2} m_{lx}$								
IX		$m_{lx} = 0{,}001\ w_u l_x^2\ x$	28	37	45	50	54	58	62	65
		$m_{ly} = 0{,}001\ w_u l_x^2\ x$	25	21	19	18	17	17	16	16
		$m_{tx} = -0{,}001\ w_u l_x^2\ x$	60	70	76	80	82	83	83	83
		$m_{ty} = -0{,}001\ w_u l_x^2\ x$	54	55	55	54	53	53	51	49
		$m_{ty} = \frac{1}{2} m_{lx}$								

——— = terletak bebas

═══ = menerus pada tumpuan

Sambungan Tabel VI.4

a1	0.145	0.119	0.100	0.085	0.074	0.067	0.060	0.054	0 050	0.047	0.044	0.041	0.038	0.036	0.034	0.033
a2	0 063	0.054	0.047	0.046	0.050	0.055	0.062	0.067	0 073	0.078	0.082	0.087	0.091	0.094	0.098	0.100
a3	—0 399	—0 350	—0.315	—0.290	—0.276	—0.264	—0.255	—0.248	—0.242	—0 237	—0 232	—0.228	—0.225	—0.221	—0.218	—0.216
a4	1.197	1 050	0 945	0 870	0 828	0.792	0.765	0 744	0.726	0 711	0.696	0 684	0.675	0 663	0.654	0.648
a1	—0 074	—0.071	—0.066	—0.061	—0.057	—0.052	—0.049	—0.045	—0 041	—0.039	—0 037	—0 034	—0.032	—0.031	—0.029	—0.028
a2	—0.018	—0.019	—0.021	—0.024	—0.028	—0.031	—0.033	—0.035	—0.037	—0.039	—0 040	—0 041	—0.042	—0.044	—0.046	—0.048
a3	0.156	0.155	0.153	0.151	0.148	0.145	0.141	0.136	0.132	0 129	0 126	0.123	0 120	0.117	0.115	0.113
a4	0 468	0 465	0 459	0 453	0 444	0.435	0 423	0 408	0.396	0 387	0 381	0.369	0 360	0.351	0.345	0.339
a1	—0.026	—0 020	—0.016	—0.013	—0.009	—0.006	—0.004	—0.004	—0 004	—0.004	—0 004	—0 004	—0.005	—0 006	—0.007	—0.008
a2	—0 075	—0 077	—0.080	—0.083	—0.087	—0.090	—0.093	—0.096	—0.098	—0.099	—0 101	—0 102	—0 104	—0.105	—0.106	—0.107
a3	0.152	0.142	0 135	0.129	0.124	0.121	0.120	0.119	0.118	0 118	0 118	0.119	0 120	0.120	0.121	0.121
a4	0 456	0 426	0 405	0 387	0 372	0.363	0.360	0 357	0 354	0 354	0.354	0 357	0 360	0.360	0.363	0.363
a1	0 063	0.053	0.045	0.040	0 036	0.034	0.033	0 031	0 030	0.028	0 027	0.026	0 025	0.024	0.023	0.022
a2	0.145	0 147	0 151	0 157	0.165	0.175	0.185	0 195	0.202	0.210	0 215	0 221	0.226	0.230	0.235	0.238
a3	—0 399	—0.389	—0.382	—0 377	—0 375	—0.374	—0.374	—0.375	—0.376	—0.374	—0.372	—0.368	—0.365	—0.363	—0.361	—0.360
a4	1 197	1 167	1 146	1 131	1 125	1 122	1 122	1.125	1 128	1.122	1 113	1.104	1.095	1.089	1.083	1.080
a1	0.144	0.116	0.099	0.087	0.080	0.073	0.068	0.062	0.058	0.054	0.051	0.047	0.044	0.041	0.039	0.037
a2	0.056	0.060	0.065	0.072	0.080	0.086	0.091	0.096	0.100	0.103	0.105	0.107	0.109	0.110	0.112	0.113
a3	—0.370	—0.327	—0.303	—0.286	—0.274	—0.255	—0.257	—0.250	—0.242	—0.237	—0.232	—0.227	—0.222	—0.218	—0.215	—0.213
a4	1.110	0.981	0 909	0.858	0 822	0.795	0.771	0.750	0.726	0.711	0.699	0.681	0.666	0.654	0.645	0.639

Tabel VI. 1.

L_1/L_2		1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5
M_1	a1	− 0.083	− 0.080	− 0.076	− 0.072	− 0.068	− 0.065	− 0.063	− 0.061	− 0.059	− 0.057	− 0.056	− 0.055	− 0.053	− 0.051	− 0.047	− 0.044
	a2	− 0.017	− 0.020	− 0.024	− 0.028	− 0.033	− 0.040	− 0.047	− 0.054	− 0.059	− 0.061	− 0.063	− 0.066	− 0.069	− 0.071	− 0.073	− 0.075
	a3	0.220	0.228	0.234	0.240	0.245	0.251	0.256	0.259	0.261	0.261	0.260	0.258	0.256	0.252	0.246	0.241
	a4	0.660	0.684	0.702	0.720	0.735	0.751	0.768	0.777	0.783	0.783	0.780	0.774	0.769	0.756	0.736	0.723
M_2	a1	− 0.017	− 0.014	− 0.012	− 0.010	− 0.008	− 0.006	− 0.003	− 0.000	+ 0.002	+ 0.003	+ 0.004	+ 0.005	+ 0.005	+ 0.005	+ 0.004	+ 0.003
	a2	− 0.083	− 0.088	− 0.094	− 0.100	− 0.105	− 0.110	− 0.114	− 0.117	− 0.119	− 0.122	− 0.125	− 0.128	− 0.131	− 0.134	− 0.136	− 0.139
	a3	0.220	0.212	0.205	0.200	0.194	0.188	0.182	0.177	0.172	0.169	0.167	0.166	0.166	0.167	0.168	0.169
	a4	0.660	0.636	0.615	0.600	0.582	0.564	0.546	0.531	0.516	0.507	0.501	0.498	0.498	0.501	0.504	0.507
M_3	a1	− 0.062	− 0.061	− 0.059	− 0.057	− 0.055	− 0.052	− 0.049	− 0.045	− 0.042	− 0.040	− 0.037	− 0.035	− 0.033	− 0.031	− 0.029	− 0.028
	a2	− 0.017	− 0.021	− 0.025	− 0.028	− 0.030	− 0.032	− 0.034	− 0.036	− 0.038	− 0.040	− 0.041	− 0.042	− 0.043	− 0.044	− 0.046	− 0.047
	a3	0.130	0.136	0.141	0.144	0.143	0.141	0.139	0.136	0.134	0.131	0.127	0.123	0.120	0.115	0.115	0.114
	a4	0.390	0.408	0.423	0.432	0.429	0.423	0.417	0.408	0.402	0.393	0.381	0.369	0.360	0.354	0.344	0.342
M_4	a1	− 0.017	− 0.017	− 0.015	− 0.013	− 0.009	− 0.007	− 0.006	− 0.005	− 0.004	− 0.004	− 0.004	− 0.004	− 0.005	− 0.006	− 0.007	− 0.008
	a2	− 0.062	− 0.068	− 0.075	− 0.080	− 0.085	− 0.088	− 0.091	− 0.094	− 0.096	− 0.098	− 0.100	− 0.102	− 0.103	− 0.105	− 0.106	− 0.107
	a3	0.130	0.130	0.130	0.128	0.125	0.123	0.120	0.118	0.117	0.117	0.117	0.118	0.119	0.120	0.120	0.120
	a4	0.390	0.390	0.390	0.384	0.375	0.369	0.360	0.354	0.351	0.351	0.351	0.354	0.357	0.360	0.360	0.360
M_{12}	a1	0.062	0.055	0.049	0.044	0.039	0.035	0.031	0.029	0.028	0.027	0.027	0.026	0.025	0.024	0.023	0.023
	a2	0.136	0.144	0.151	0.159	0.166	0.174	0.182	0.189	0.197	0.204	0.212	0.218	0.225	0.231	0.236	0.238
	a3	− 0.355	− 0.365	− 0.369	− 0.368	− 0.367	− 0.365	− 0.365	− 0.365	− 0.365	− 0.365	− 0.365	− 0.364	− 0.364	− 0.363	− 0.363	− 0.362
	a4	1.065	0.972	0.900	0.861	0.828	0.798	0.771	0.744	0.723	0.708	0.690	0.675	0.666	0.657	0.645	0.639
M_{21}	a1	0.136	0.113	0.098	0.088	0.080	0.073	0.067	0.061	0.057	0.053	0.050	0.046	0.043	0.041	0.039	0.036
	a2	0.062	0.064	0.069	0.075	0.081	0.086	0.091	0.095	0.098	0.101	0.104	0.106	0.108	0.110	0.112	0.114
	a3	− 0.355	− 0.324	− 0.300	− 0.287	− 0.276	− 0.266	− 0.257	− 0.248	− 0.241	− 0.236	− 0.230	− 0.225	− 0.222	− 0.219	− 0.215	− 0.213
	a4	1.065	0.972	0.900	0.861	0.828	0.798	0.771	0.744	0.723	0.708	0.690	0.675	0.666	0.657	0.645	0.639

Sambungan Tabel VI.2

M_1	a1	−0.071	−0.065	−0.060	−0.056	−0.052	−0.050	−0.046	−0.042	−0.040	−0.035	−0.037	−0.034	−0.032	−0.031	−0.029	−0.028
	a2	−0.017	−0.019	−0.022	−0.026	−0.031	−0.035	−0.038	−0.040	−0.043	−0.045	−0.046	−0.047	−0.048	−0.049	−0.051	−0.053
	a3	0.158	0.158	0.161	0.163	0.164	0.164	0.163	0.160	0.157	0.156	0.155	0.153	0.150	0.147	0.145	0.143
	a4	0.474	0.474	0.483	0.489	0.492	0.492	0.489	0.480	0.471	0.468	0.465	0.459	0.450	0.441	0.435	0.429
M_2	a1	−0.017	−0.015	−0.013	−0.011	−0.010	−0.008	−0.006	−0.005	−0.004	−0.004	−0.003	−0.003	−0.003	−0.003	−0.004	−0.005
	a2	−0.071	0.080	−0.089	−0.096	−0.102	−0.104	−0.105	−0.105	−0.105	−0.105	−0.107	−0.108	−0.110	−0.112	−0.114	−0.116
	a3	0.158	0.160	0.161	0.160	0.157	0.152	0.147	0.141	0.137	0.134	0.133	0.133	0.133	0.133	0.134	0.134
	a4	0.474	0.480	0.483	0.480	0.471	0.456	0.441	0.423	0.411	0.402	0.399	0.399	0.399	0.399	0.402	0.402
M_3	a1	0.094	0.044	0.035	0.027	0.023	0.015	0.012	0.011	0.012	0.015	0.017	0.021	0.026	0.029	0.030	0.029
	a2	0.163	0.172	0.181	0.189	0.196	0.201	0.214	0.226	0.239	0.252	0.271	0.293	0.307	0.318	0.330	0.339
	a3	−0.442	−0.447	−0.450	−0.451	−0.453	−0.455	−0.458	−0.464	−0.473	−0.484	−0.497	−0.509	−0.521	−0.529	−0.533	−0.535
	a4	1.326	1.341	1.350	1.353	1.359	1.365	1.374	1.392	1.419	1.452	1.491	1.527	1.563	1.587	1.599	1.605
M_4	a1	0.163	0.125	0.103	0.086	0.075	0.064	0.060	0.055	0.050	0.047	0.043	0.040	0.038	0.036	0.034	0.032
	a2	0.054	0.047	0.044	0.044	0.049	0.055	0.062	0.068	0.073	0.078	0.082	0.087	0.091	0.094	0.098	0.101
	a3	0.442	0.373	0.330	0.298	0.276	0.264	0.255	0.249	0.243	0.236	0.231	0.227	0.223	0.220	0.218	0.216
	a4	1.326	1.119	0.990	0.894	0.828	0.792	0.765	0.747	0.729	0.708	0.693	0.681	0.669	0.660	0.654	0.648
M_5	a1	− 0.069	− 0.072	− 0.068	− 0.060	− 0.054	− 0.051	− 0.047	− 0.044	− 0.041	− 0.039	− 0.036	− 0.035	− 0.033	− 0.032	− 0.031	− 0.030
	a2	−0.021	−0.024	−0.027	−0.030	−0.035	−0.040	−0.046	−0.053	−0.059	−0.064	−0.068	−0.071	−0.074	−0.076	−0.077	−0.078
	a3	0.146	0.153	0.160	0.167	0.175	0.183	0.192	0.201	0.209	0.215	0.217	0.219	0.220	0.220	0.220	0.220
	a4	0.438	0.459	0.480	0.501	0.525	0.549	0.576	0.603	0.627	0.645	0.651	0.657	0.660	0.660	0.660	0.660
M_6	a1	−0.014	−0.012	−0.010	−0.009	−0.009	−0.008	−0.008	−0.006	−0.004	−0.001	+0.002	+0.003	+0.003	+0.004	+0.004	+0.004
	a2	−0.079	−0.084	−0.089	−0.094	−0.099	−0.104	−0.108	−0.111	−0.114	−0.117	−0.121	−0.125	−0.128	−0.131	−0.134	−0.136
	a3	0.173	0.176	0.179	0.180	0.181	0.182	0.181	0.178	0.174	0.170	0.169	0.168	0.168	0.167	0.166	0.166
	a4	0.519	0.528	0.537	0.540	0.543	0.546	0.543	0.534	0.522	0.510	0.507	0.504	0.504	0.501	0.498	0.498
M_{12}	a1	0.137	0.135	0.127	0.116	0.106	0.097	0.089	0.082	0.076	0.071	0.065	0.060	0.056	0.053	0.051	0.049
	a2	0.064	0.073	0.077	0.079	0.084	0.085	0.089	0.094	0.100	0.105	0.109	0.113	0.119	0.124	0.129	0.134
	a3	−0.437	−0.437	−0.435	−0.429	−0.419	−0.408	−0.396	−0.386	−0.377	−0.368	−0.358	−0.349	−0.342	−0.336	−0.332	−0.328
	a4	1.311	1.311	1.305	1.294	1.257	1.224	1.183	1.158	1.131	1.104	1.074	1.047	1.026	1.008	0.996	0.984

Sambungan Tabel VI.3

M_1	a1	-0.079	0.073	0.067	0.061	0.056	0.051	0.047	0.043	0.039	0.036	-0.033	-0.031	-0.029	-0.028	
	a2	-0.014	-0.017	0.020	0.023	0.026	0.028	-0.031	0.034	0.036	-0.039	-0.040	-0.042	0.043	-0.044	-0.046	-0.047
	a3	0.173	0.168	0.162	0.158	0.149	0.144	0.140	0.137	0.134	0.130	0.127	0.123	0.120	0.118	0.115	0.114
	a4	0.519	0.504	0.486	0.465	0.447	0.432	0.420	0.411	0.399	0.390	0.381	0.369	0.360	0.354	0.345	0.342
M_2	a1	-0.021	0.018	0.016	0.013	0.010	0.008	0.007	0.005	0.003	0.006	0.006	-0.006	-0.006	-0.006	-0.007	-0.008
	a2	-0.069	-0.075	0.080	-0.084	0.087	-0.091	-0.094	-0.096	-0.100	-0.102	-0.103	-0.103	-0.103	-0.105	-0.106	-0.107
	a3	0.146	0.141	0.136	0.131	0.127	0.124	0.122	0.121	0.121	0.121	0.120	0.120	0.120	0.120	0.120	0.120
	a4	0.438	0.423	0.408	0.393	0.381	0.372	0.366	0.363	0.363	0.363	0.360	0.360	0.360	0.360	0.360	0.360
M_{12}	a1	0.064	0.057	0.052	0.047	0.043	0.039	0.035	0.032	0.028	0.026	0.025	0.024	0.024	0.024	0.024	0.024
	a2	0.137	0.144	0.154	0.165	0.174	0.181	0.188	0.194	0.201	0.207	0.213	0.220	0.226	0.231	0.235	0.240
	a3	0.437	0.428	0.420	0.413	0.406	0.397	0.389	0.381	0.375	-0.370	0.364	-0.366	-0.366	0.366	-0.366	-0.366
	a4	1.311	1.284	1.260	1.239	1.218	1.191	1.167	1.143	1.135	1.110	1.104	1.098	1.098	1.098	1.098	1.098
M_3	a1	0.039	0.033	0.046	0.060	0.055	0.051	0.048	0.045	0.042	0.040	0.039	0.038	0.037	0.036	0.036	0.036
	a2	0.018	0.021	0.027	0.032	0.038	0.044	0.050	0.056	0.061	0.064	0.068	0.071	-0.073	-0.074	-0.075	-0.075
	a3	0.174	0.182	0.188	0.195	0.202	0.209	0.215	0.225	0.229	0.229	0.230	0.231	0.231	0.230	0.229	0.227
	a4	0.523	0.546	0.564	0.585	0.606	0.627	0.645	0.669	0.684	0.687	0.690	0.693	0.693	0.690	0.687	0.681
M_4	a1	0.017	0.015	0.014	0.014	0.014	0.012	-0.010	0.007	-0.005	-0.002	0.001	0.002	0.003	-0.003	-0.004	-0.005
	a2	0.076	0.085	0.089	0.096	0.102	0.107	0.112	0.115	0.119	0.122	0.125	0.128	0.131	-0.134	-0.137	-0.140
	a3	0.187	0.187	0.189	0.192	0.193	0.191	0.188	0.183	0.177	0.173	0.171	0.170	0.170	0.170	0.170	0.170
	a4	0.561	0.561	0.562	0.576	0.579	0.573	0.564	0.549	0.531	0.519	0.513	0.510	0.510	0.510	0.510	0.510
M_{13}	a1	0.172	0.152	0.136	0.125	0.113	0.104	0.095	0.086	0.079	0.072	0.065	0.059	0.053	0.048	0.046	0.044
	a2	0.049	0.054	0.057	0.063	0.068	0.075	0.082	0.088	0.094	0.100	0.106	0.110	0.114	0.119	0.124	0.129
	a3	0.521	0.496	0.471	0.453	0.437	0.421	-0.406	-0.391	-0.378	0.367	0.356	-0.345	-0.336	-0.331	-0.326	-0.322
	a4	1.563	1.485	1.413	1.359	1.311	1.263	1.219	1.175	1.134	1.101	1.068	1.035	1.008	0.993	0.978	0.966

Sambungan Tabel VI 4

a1	−0.076	−0.065	−0.059	−0.054	−0.049	−0.044	−0.041	−0.038	−0.036	−0.036	−0.034	−0.033	−0.032	−0.030	−0.029	−0.028
a2	−0.017	−0.018	−0.020	−0.023	−0.026	−0.029	−0.031	−0.034	−0.037	−0.040	−0.043	−0.045	−0.048	−0.049	−0.051	−0.053
a3	0.187	0.179	0.173	0.168	0.164	0.161	0.158	0.155	0.153	0.152	0.151	0.150	0.148	0.147	0.146	145
a4	0.561	0.537	0.519	0.504	0.492	0.483	0.474	0.465	0.459	0.456	0.453	0.450	0.444	0.441	0.438	0.435
a1	−0.018	−0.015	−0.012	−0.009	−0.006	−0.004	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003
a2	−0.079	−0.083	−0.086	−0.089	−0.091	−0.094	−0.097	−0.100	−0.104	−0.107	−0.110	−0.112	−0.114	−0.115	−0.115	−0.115
a3	0.174	0.166	0.157	0.149	0.143	0.138	0.136	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
a4	0.522	0.498	0.561	0.447	0.429	0.414	0.408	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405
a1	0.049	0.048	0.044	0.037	0.031	0.028	0.025	0.024	0.022	0.021	0.020	0.019	0.018	0.017	0.016	0.016
a2	0.172	0.188	0.201	0.212	0.223	0.233	0.243	0.252	0.261	0.269	0.277	0.284	0.291	0.299	0.308	0.315
a3	−0.521	−0.540	−0.540	0.533	−0.525	−0.522	0.521	0.520	−0.519	−0.518	−0.516	−0.514	−0.512	−0.510	−0.509	−0.507
a4	1.563	1.620	1.620	1.599	1.575	1.566	1.563	1.560	1.557	1.554	1.548	1.542	1.536	1.530	1.527	1.527
a1	−0.075	−0.071	−0.067	0.063	−0.059	−0.054	−0.049	−0.046	−0.043	−0.040	−0.038	−0.035	−0.031	−0.028	−0.026	−0.026
a2	−0.026	−0.026	−0.028	−0.032	−0.035	−0.037	−0.040	−0.043	−0.045	−0.046	−0.047	−0.048	−0.049	−0.050	−0.051	−0.052
a3	0.152	0.155	0.159	0.162	0.163	0.163	0.162	0.161	0.158	0.156	0.153	0.149	0.146	0.144	0.142	0.141
a4	0.456	0.465	0.477	0.486	0.489	0.489	0.486	0.483	0.474	0.468	0.459	0.447	0.438	0.432	0.426	0.423
a1	−0.018	−0.018	−0.018	−0.016	−0.012	−0.009	−0.006	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003	−0.003	−0.004	−0.005
a2	−0.074	−0.080	−0.088	−0.093	−0.096	−0.097	−0.098	−0.099	−0.101	−0.103	−0.106	−0.108	−0.111	−0.113	−0.116	−0.118
a3	0.156	0.160	0.164	0.164	0.160	0.151	0.144	0.139	0.134	0.132	0.132	0.132	0.133	0.134	0.135	0.136
a4	0.468	0.480	0.492	0.492	0.480	0.453	0.432	0.417	0.402	0.396	0.396	0.396	0.399	0.402	0.405	0.408
a1	0.056	0.043	0.036	0.028	0.023	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.023	0.024	0.025	0.026
a2	0.144	0.156	0.167	0.178	0.189	0.201	0.216	0.230	0.242	0.257	0.273	0.288	0.303	0.316	0.325	0.334
a3	−0.370	−0.386	−0.398	−0.410	−0.422	−0.434	−0.446	−0.457	−0.465	−0.479	−0.492	−0.501	−0.511	−0.520	−0.526	−0.531
a4	1.110	1.158	1.194	1.230	1.266	1.302	1.338	1.371	1.395	1.407	1.416	1.503	1.533	1.560	1.578	1.591

TABEL A-6
KONSTANTA PERENCANAAN

Tulangan Baja			Mutu Beton (MPa)											
ıutu ıaja JTP JTD	f_y	ρ min	f_c' = 17 β_1 = 0,85		f_c' = 20 β_1 = 0,85		f_c' = 25 β_1 = 0,85		f_c' = 30 β_1 = 0,85		f_c' = 35 β_1 = 0,81		f_c' = 40 β_1 = 0,77	
			ρ maks	ρ sm	ρ maks	ρ sm	ρ maks	ρ sm	ρ maks	ρ sm	ρ maks	ρ sm	ρ maks	ρ sm
24	240	0,0058	0,0274	0,0132	0,0323	0,0156	0,0403	0,0198	0,0484	0,0239	0,0538	0,0269	0,0584	0,0313
30	300	0,0047	0,0205	0,0107	0,0241	0,0127	0,0301	0,0159	0,0361	0,0195	0,0402	0,0221	0,0436	0,0251
35	350	0,0040	0,0166	0,0093	0,0196	0,0107	0,0244	0,0132	0,0293	0,0163	0,0326	0,0183	0,0354	0,0214
40	400	0,0035	0,0138	0,0083	0,0163	0,0092	0,0203	0,0117	0,0244	0,0142	0,0271	0,0160	0,0295	0,0185
50	500	0,0028	0,0100	0,0070	0,0118	0,0074	0,0148	0,0098	0,0177	0,0113	0,0197	0,0126	0,0214	0,0143

ıterangan : ρ *maks* = 0,75 ρ_b

ρ *sm* = ρ *saran* = nilai ρ yang disarankan untuk keperluan perkiraan.

TABEL A-13
RASIO PENULANGAN (ρ) vs KOEFISIEN TAHANAN (k)
(f_c' = 40 MPa, f_y = 240 MPa, k dalam MPa)

ρ	k	ρ	k	ρ	k	ρ	k	ρ	k
0,0058	1,3634	0,0085	1,9786	0,0112	2,5814	0,0139	3,1718	0,0166	3,7499
0,0059	1,3864	0,0086	2,0012	0,0113	2,6035	0,0140	3,1935	0,0167	3,7711
0,0060	1,4094	0,0087	2,0237	0,0114	2,6256	0,0141	3,2151	0,0168	3,7922
0,0061	1,4324	0,0088	2,0462	0,0115	2,6476	0,0142	3,2367	0,0169	3,8133
0,0062	1,4553	0,0089	2,0687	0,0116	2,6697	0,0143	3,2583	0,0170	3,8345
0,0063	1,4783	0,0090	2,0912	0,0117	2,6917	0,0144	3,2798	0,0171	3,8556
0,0064	1,5012	0,0091	2,1136	0,0118	2,7137	0,0145	3,3014	0,0172	3,8767
0,0065	1,5241	0,0092	2,1361	0,0119	2,7357	0,0146	3,3229	0,0173	3,8977
0,0066	1,5470	0,0093	2,1585	0,0120	2,7577	0,0147	3,3444	0,0174	3,9188
0,0067	1,5699	0,0094	2,1809	0,0121	2,7796	0,0148	3,3659	0,0175	3,9398
0,0068	1,5927	0,0095	2,2033	0,0122	2,8015	0,0149	3,3874	0,0176	3,9608
0,0069	1,6156	0,0096	2,2257	0,0123	2,8235	0,0150	3,4088	0,0177	3,9818
0,0070	1,6384	0,0097	2,2481	0,0124	2,8454	0,0151	3,4303	0,0178	4,0028
0,0071	1,6612	0,0098	2,2704	0,0125	2,8673	0,0152	3,4517	0,0179	4,0238
0,0072	1,6840	0,0099	2,2927	0,0126	2,8891	0,0153	3,4731	0,0180	4,0447
0,0073	1,7067	0,0100	2,3150	0,0127	2,9110	0,0154	3,4945	0,0181	4,0657
0,0074	1,7295	0,0101	2,3373	0,0128	2,9328	0,0155	3,5159	0,0182	4,0866
0,0075	1,7522	0,0102	2,3596	0,0129	2,9546	0,0156	3,5372	0,0183	4,1075
0,0076	1,7749	0,0103	2,3819	0,0130	2,9764	0,0157	3,5586	0,0184	4,1284
0,0077	1,7976	0,0104	2,4041	0,0131	2,9982	0,0158	3,5799	0,0185	4,1492
0,0078	1,8203	0,0105	2,4263	0,0132	3,0200	0,0159	3,6012	0,0186	4,1701
0,0079	1,8430	0,0106	2,4485	0,0133	3,0417	0,0160	3,6225	0,0187	4,1909
0,0080	1,8656	0,0107	2,4707	0,0134	3,0634	0,0161	3,6438	0,0188	4,2117
0,0081	1,8883	0,0108	2,4929	0,0135	3,0852	0,0162	3,6650	0,0189	4,2325
0,0082	1,9109	0,0109	2,5151	0,0136	3,1069	0,0163	3,6863	0,0190	4,2533
0,0083	1,9335	0,0110	2,5372	0,0137	3,1285	0,0164	3,7075	0,0191	4,2741
0,0084	1,9561	0,0111	2,5593	0,0138	3,1502	0,0165	3,7287	0,0192	4,2948

TABEL A-13 (lanjutan)
RASIO PENULANGAN (ρ) vs KOEFISIEN TAHANAN (k)
(f_c' = 40 MPa, f_y = 240 MPa, k dalam MPa)

ρ	k	ρ	k	ρ	k	ρ	k	ρ	k
0,0193	4,3155	0,0237	5,2106	0,0281	6,0731	0,0325	6,9026	0,0369	7,6992
0,0194	4,3362	0,0238	5,2308	0,0282	6,0924	0,0326	6,9211	0,0370	7,7169
0,0195	4,3569	0,0239	5,2507	0,0283	6,1116	0,0327	6,9395	0,0371	7,7346
0,0196	4,3776	0,0240	5,2706	0,0284	6,1307	0,0328	6,9580	0,0372	7,7523
0,0197	4,3983	0,0241	5,2905	0,0285	6,1499	0,0329	6,9764	0,0373	7,7700
0,0198	4,4189	0,0242	5,3104	0,0286	6,1691	0,0330	6,9948	0,0374	7,7876
0,0199	4,4395	0,0243	5,3303	0,0287	6,1882	0,0331	7,0132	0,0375	7,8053
0,0200	4,4602	0,0244	5,3502	0,0288	6,2073	0,0332	7,0315	0,0376	7,8229
0,0201	4,4808	0,0245	5,3700	0,0289	6,2264	0,0333	7,0499	0,0377	7,8405
0,0202	4,5013	0,0246	5,3899	0,0290	6,2455	0,0334	7,0682	0,0378	7,8581
0,0203	4,5219	0,0247	5,4097	0,0291	6,2646	0,0335	7,0865	0,0379	7,8756
0,0204	4,5424	0,0248	5,4295	0,0292	6,2836	0,0336	7,1048	0,0380	7,8932
0,0205	4,5630	0,0249	5,4492	0,0293	6,3026	0,0337	7,1231	0,0381	7,9107
0,0206	4,5835	0,0250	5,4690	0,0294	6,3216	0,0338	7,1414	0,0382	7,9282
0,0207	4,6040	0,0251	5,4887	0,0295	6,3406	0,0339	7,1596	0,0383	7,9457
0,0208	4,6244	0,0252	5,5085	0,0296	6,3596	0,0340	7,1779	0,0384	7,9632
0,0209	4,6449	0,0253	5,5282	0,0297	6,3786	0,0341	7,1961	0,0385	7,9807
0,0210	4,6653	0,0254	5,5479	0,0298	6,3975	0,0342	7,2143	0,0386	7,9981
0,0211	4,6857	0,0255	5,5675	0,0299	6,4164	0,0343	7,2325	0,0387	8,0156
0,0212	4,7062	0,0256	5,5872	0,0300	6,4354	0,0344	7,2506	0,0388	8,0330
0,0213	4,7265	0,0257	5,6068	0,0301	6,4543	0,0345	7,2688	0,0389	8,0504
0,0214	4,7469	0,0258	5,6265	0,0302	6,4731	0,0346	7,2869	0,0390	8,0678
0,0215	4,7673	0,0259	5,6461	0,0303	6,4920	0,0347	7,3050	0,0391	8,0851
0,0216	4,7876	0,0260	5,6657	0,0304	6,5108	0,0348	7,3231	0,0392	8,1025
0,0217	4,8079	0,0261	5,6852	0,0305	6,5297	0,0349	7,3412	0,0393	8,1198
0,0218	4,8282	0,0262	5,7048	0,0306	6,5485	0,0350	7,3592	0,0394	8,1371
0,0219	4,8485	0,0263	5,7243	0,0307	6,5673	0,0351	7,3773	0,0395	8,1544
0,0220	4,8688	0,0264	5,7439	0,0308	6,5860	0,0352	7,3953	0,0396	8,1717
0,0221	4,8890	0,0265	5,7634	0,0309	6,6048	0,0353	7,4133	0,0397	8,1890
0,0222	4,9093	0,0266	5,7829	0,0310	6,6235	0,0354	7,4313	0,0398	8,2062
0,0223	4,9295	0,0267	5,8023	0,0311	6,6423	0,0355	7,4493	0,0399	8,2234
0,0224	4,9497	0,0268	5,8218	0,0312	6,6610	0,0356	7,4673	0,0400	8,2406
0,0225	4,9699	0,0269	5,8412	0,0313	6,6797	0,0357	7,4852	0,0401	8,2578
0,0226	4,9901	0,0270	5,8606	0,0314	6,6983	0,0358	7,5031	0,0402	8,2750
0,0227	5,0102	0,0271	5,8800	0,0315	6,7170	0,0359	7,5210	0,0403	8,2922
0,0228	5,0303	0,0272	5,8994	0,0316	6,7356	0,0360	7,5389	0,0404	8,3093
0,0229	5,0505	0,0273	5,9188	0,0317	6,7542	0,0361	7,5568	0,0405	8,3264
0,0230	5,0706	0,0274	5,9382	0,0318	6,7729	0,0362	7,5747	0,0406	8,3436
0,0231	5,0906	0,0275	5,9575	0,0319	6,7914	0,0363	7,5925	0,0407	8,3606
0,0232	5,1107	0,0276	5,9768	0,0320	6,8100	0,0364	7,6103	0,0408	8,3777
0,0233	5,1308	0,0277	5,9961	0,0321	6,8286	0,0365	7,6281	0,0409	8,3948
0,0234	5,1508	0,0278	6,0154	0,0322	6,8571	0,0366	7,6459	0,0410	8,4118
0,0235	5,1708	0,0279	6,0347	0,0323	6,8656	0,0367	7,6637	0,0411	8,4288
0,0236	5,1908	0,0280	6,0539	0,0324	6,8841	0,0368	7,6814	0,0412	8,4459

$\delta = 0{,}8$

ξ	ϕ	ϕ'	ζ	$100n\omega$	C_a	C_b
0,560	0,786	0,956	0,886	217,8	0,720	0,764
0,565	0,770	0,935	0,887	253,4	0,667	0,716
0,570	0,754	0,915	0,889	399,8	0,612	0,664
0,575	0,739	0,895	0,890	367,4	0,553	0,607
0,580	0,724	0,875	0,892	467,2	0,490	0,544

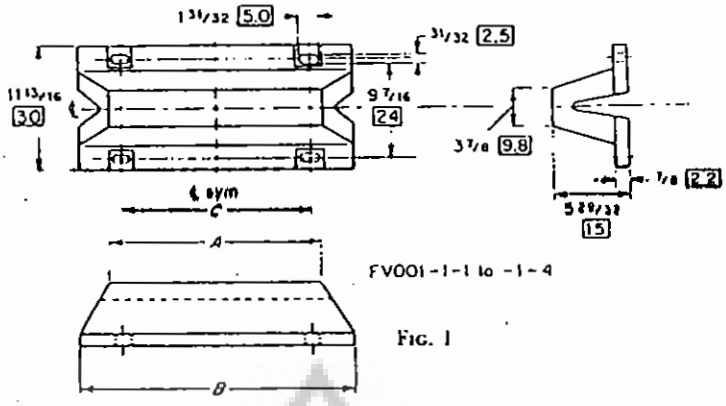
$\delta = 1$

ξ	ϕ	ϕ'	ζ	$100n\omega$	C_a	C_b
0,110	8,091	89,00	0,963	0,688	12,29	4,240
0,115	7,696	59,00	0,961	0,760	11,70	4,135
0,120	7,333	44,00	0,959	0,837	11,16	4,036
0,125	7,000	35,00	0,957	0,919	10,66	3,942
0,130	6,692	29,00	0,955	1,006	10,20	3,854
0,135	6,407	24,71	0,953	1,098	9,777	3,770
0,140	6,143	21,50	0,951	1,195	9,380	3,691
0,145	5,897	19,00	0,494	1,298	9,011	3,615
0,150	5,667	17,00	0,947	1,406	8,665	3,542
0,155	5,452	15,36	0,945	1,521	8,341	3,473
0,160	5,250	14,00	0,943	1,641	8,037	3,407
0,165	5,061	12,85	0,941	1,768	7,751	3,343
0,170	4,882	11,86	0,940	1,901	7,481	3,282
0,175	4,714	11,00	0,938	2,042	7,227	3,223
0,180	4,556	10,25	0,936	2,189	6,986	3,167
0,185	4,405	9,588	0,934	2,344	6,757	3,112
0,190	4,263	9,000	0,933	2,507	6,540	3,059
0,195	4,128	8,474	0,931	2,678	6,334	3,008
0,200	4,000	8,000	0,929	2,857	6,137	2,958
0,205	3,878	7,571	0,927	3,045	5,950	2,910
0,210	3,762	7,182	0,926	3,243	5,771	2,863
0,215	3,651	6,826	0,924	3,450	5,601	2,818
0,220	3,545	6,500	0,923	3,667	5,437	2,774
0,225	3,444	6,200	0,921	3,894	5,280	2,730
0,230	3,348	5,923	0,919	4,133	5,130	2,688
0,235	3,255	5,667	0,918	4,383	4,986	2,647
0,240	3,167	5,429	0,916	4,645	4,847	2,607
0,245	3,082	5,207	0,915	4,920	4,714	2,568
0,250	3,000	5,000	0,913	5,208	4,585	2,530
0,255	2,922	4,806	0,912	5,511	4,461	2,492

$\delta = 1$

ξ	ϕ	ϕ'	ζ	$100n\omega$	C_a	C_b
0,260	2,846	4,625	0,910	5,828	4,341	2,455
0,265	2,774	4,454	0,909	6,160	4,226	2,419
0,270	2,704	4,294	0,908	6,509	4,114	2,384
0,275	2,636	4,143	0,906	6,875	4,006	2,349
0,280	2,571	4,000	0,905	7,259	3,901	2,315
0,285	2,509	3,865	0,904	7,663	3,800	2,281
0,290	2,448	3,737	0,902	8,086	3,702	2,247
0,295	2,390	3,615	0,901	8,532	3,606	2,215
0,300	2,333	3,500	0,900	9,000	3,514	2,182
0,305	2,279	3,390	0,899	9,492	3,424	2,150
0,310	2,226	3,286	0,898	10,01	3,336	2,118
0,315	2,175	3,186	0,897	10,56	3,251	2,087
0,320	2,125	3,091	0,895	11,13	3,167	2,056
0,325	2,077	3,000	0,894	11,74	3,086	2,025
0,330	2,030	2,913	0,893	12,38	3,007	1,995
0,335	1,985	2,830	0,892	13,05	2,930	1,965
0,340	1,941	2,750	0,892	13,76	2,855	1,935
0,345	1,899	2,673	0,891	14,52	2,781	1,905
0,350	1,857	2,600	0,890	15,31	2,709	1,875
0,355	1,817	2,529	0,889	16,16	2,639	1,846
0,360	1,778	2,462	0,888	17,05	2,570	1,816
0,365	1,740	2,396	0,887	18,00	2,502	1,787
0,370	1,703	2,333	0,887	19,01	2,435	1,757
0,375	1,667	2,273	0,886	20,09	2,370	1,728
0,380	1,632	2,214	0,885	21,24	2,306	1,699
0,385	1,597	2,158	0,885	22,46	2,243	1,670
0,390	1,564	2,103	0,884	23,77	2,181	1,640
0,395	1,532	2,051	0,884	25,16	2,120	1,611
0,400	1,500	2,000	0,883	26,67	2,060	1,581
0,405	1,469	1,951	0,883	28,28	2,001	1,551
0,410	1,439	1,903	0,883	30,02	1,943	1,522
0,415	1,410	1,857	0,882	31,89	1,885	1,491
0,420	1,381	1,812	0,882	33,92	1,828	1,461
0,425	1,353	1,769	0,882	36,12	1,772	1,430
0,430	1,326	1,727	0,882	38,52	1,716	1 399
0,435	1,299	1,687	0,882	41,14	1,660	1,368
0,440	1,273	1,647	0,882	44,00	1,606	1,336
0,445	1,247	1,609	0,882	47,15	1,551	1,304
0,450	1,222	1,571	0,882	50,62	1,497	1,271
0,455	1,198	1,535	0,882	54,48	1,443	1,238
0,460	1,174	1,500	0,882	58,78	1,389	1,204
0,465	1,150	1,466	0,882	63,60	1,335	1,169
0,470	1,128	1,432	0,883	69,03	1,281	1,133
0,475	1,105	1,400	0,883	75,21	1,227	1,097
0,480	1,083	1,368	0,884	82,29	1,173	1,059
0,485	1,062	1,338	0,884	90,47	1,118	1,020
0,490	1,041	1,308	0,885	100,0	1,063	0,980
0,495	1,020	1,278	0,886	111,4	1,007	0,938
0,500	1,000	1,250	0,887	125,0	0,950	0,894
0,505	0,980	1,222	0,888	141,7	0,892	0,849
0,510	0,961	1,195	0,889	162,6	0,832	0,800
0,515	0,942	1,169	0,890	189,4	0,770	0,749
0,520	0,923	1,143	0,891	225,3	0,706	0,693
0,525	0,905	1,118	0,892	275,6	0,638	0,633
0,530	0,887	1,093	0,893	351,1	0,565	0,567

TABLE 5.14 Dimensions and Capacities of Bridgestone Super-Arch Fenders



FV001-1-1 to -1-4

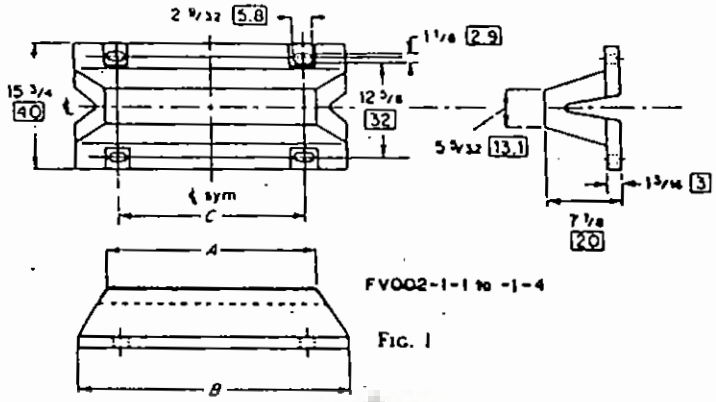
FIG. 1

Part no.	Fig. no.	Dimensions A, in. (cm)	Dimensions B, in. (cm)	Dimensions C, in. (cm)	Load, kips (metric tons)	Energy, ft-kips (metric ton-meters)	Contact area, ft² (meters²)	RIE, kips/ft-kip (metric tons/metric ton-meter)
FV001-1-1	1	39 3/8	41 3/8	33 13/16	28.7	4.63	1.062	6.19
		(100)	(107.5)	(85.5)	(13)	(0.64)	(0.098)	(20.31)
-1-2	1	39 3/8	41 3/8	33 13/16	26.5	4.13	1.062	6.41
		(100)	(107.5)	(85.5)	(12)	(0.57)	(0.098)	(21.05)
-1-3	1	39 3/8	41 3/8	33 13/16	19.8	3.11	1.062	6.37
		(100)	(107.5)	(85.5)	(9)	(0.43)	(0.098)	(20.93)
-1-4	1	39 3/8	41 3/8	33 13/16	13.2	2.10	1.062	6.30
		(100)	(107.5)	(85.5)	(6)	(0.29)	(0.098)	(20.69)
FV001-2-1	2	59	62	26 9/16	44.1	6.95	1.580	6.34
		(150)	(157.5)	(67.5)	(20)	(0.96)	(0.147)	(20.83)
-2-2	2	59	62	26 9/16	37.5	6.15	1.580	6.09
		(150)	(157.5)	(67.5)	(17)	(0.85)	(0.147)	(20.00)
-2-3	2	59	62	26 9/16	28.7	4.63	1.580	6.19
		(150)	(157.5)	(67.5)	(13)	(0.64)	(0.147)	(20.31)
-2-4	2	59	62	26 9/16	19.8	3.11	1.580	6.37
		(150)	(157.5)	(67.5)	(9)	(0.43)	(0.147)	(20.93)
FV001-3-1	3	78 3/4	81 3/4	24 7/16	57.3	8.69	2.121	6.60
		(200)	(207.5)	(62.0)	(26)	(1.2)	(0.196)	(21.67)
-3-2	3	78 3/4	81 3/4	24 7/16	50.7	7.96	2.121	6.37
		(200)	(207.5)	(62.0)	(23)	(1.1)	(0.196)	(20.91)
-3-3	3	78 3/4	81 3/4	24 7/16	37.5	6.15	2.121	6.09
		(200)	(207.5)	(62.0)	(17)	(0.85)	(0.196)	(20.00)
-3-4	3	78 3/4	81 3/4	24 7/16	26.5	4.13	2.121	6.41
		(200)	(207.5)	(62.0)	(12)	(0.57)	(0.196)	(21.05)

NOTES: *R* Reaction load.
E Energy absorbed.
Unless otherwise specified:
(1) Material: metal parts—steel; elastomer—rubber.
(2) Dimensions in boxes in Fig. 1 are in centimeters.
(3) Skin of elastomer on all surfaces and edges.
(4) I.D. of holes coated with rust-preventive coatings.
(5) Rated deflection: 45% of free height.

SOURCE: Lord Manufacturing Company, Division of Lord Corporation, distributor for Bridgestone Tire Company, Ltd.

TABLE 5.15 Dimensions and Capacities of Bridgestone Super-Arch Fenders



FV002-1-1 to -1-4

FIG. 1

Part no.	Fig. no.	Dimensions A, in. (cm)	Dimensions B, in. (cm)	Dimensions C, in. (cm)	Load, kips (metric tons)	Energy, ft-kips (metric ton-meters)	Contact area, ft² (meters²)	R/E, kips/ft-kip (metric tons/metric ton-meter)
FV002-1-1	1	39 3/8 (100)	43 3/8 (110)	33 7/8 (86)	39.7 (18)	7.96 (1.1)	1.411 (0.131)	4.98 (16.36)
-1-2	1	39 3/8 (100)	43 3/8 (110)	33 7/8 (86)	33.1 (15)	7.24 (1.0)	1.411 (0.131)	4.57 (15.00)
-1-3	1	39 3/8 (100)	43 3/8 (110)	33 7/8 (86)	26.5 (12)	5.50 (0.76)	1.411 (0.131)	4.81 (15.79)
-1-4	1	39 3/8 (100)	43 3/8 (110)	33 7/8 (86)	17.6 (8)	3.69 (0.51)	1.411 (0.131)	4.78 (15.69)
FV002-2-1	2	59 (150)	62 (160)	26 13/16 (68)	57.3 (26)	12.31 (1.7)	2.114 (0.196)	4.66 (15.29)
-2-2	2	59 (150)	62 (160)	26 13/16 (68)	50.7 (23)	10.86 (1.5)	2.114 (0.196)	4.67 (15.33)
-2-3	2	59 (150)	62 (160)	26 13/16 (68)	37.5 (17)	7.96 (1.1)	2.114 (0.196)	4.71 (15.45)
-2-4	2	59 (150)	62 (160)	26 13/16 (68)	26.5 (12)	5.50 (0.76)	2.114 (0.196)	4.81 (15.79)
FV002-3-1	3	78 3/4 (200)	81 3/4 (210)	24 7/16 (62)	77.2 (35)	15.93 (2.2)	2.820 (0.262)	4.84 (15.91)
-3-2	3	78 3/4 (200)	81 3/4 (210)	24 7/16 (62)	66.2 (30)	14.48 (2.0)	2.820 (0.262)	4.57 (15.00)
-3-3	3	78 3/4 (200)	81 3/4 (210)	24 7/16 (62)	50.7 (23)	10.86 (1.5)	2.820 (0.262)	4.67 (15.33)
-3-4	3	78 3/4 (200)	81 3/4 (210)	24 7/16 (62)	33.1 (15)	7.24 (1.0)	2.820 (0.262)	4.57 (15.00)

NOTES: R Reaction load.
E Energy absorbed.

Unless otherwise specified:
(1) Material: metal parts—steel; elastomer—rubber.
(2) Dimensions in boxes in Fig. 1 are in centimeters.
(3) Skin of elastomer on all surfaces and edges.
(4) I.D. of holes coated with rust-preventive coatings.
(5) Rated deflection: 45% of free height.

SOURCE: Lord Manufacturing Company, Division of Lord Corporation, distributor for Bridgestone Tire Company, Ltd.

```
PORTAL TREETLE ARAH MENAMPANG
SYSTEM
L=I

RESTRAINTS
1  101  1   R=1,1,1,1,1,1
102  202  1  R=0,0,1,1,1,0

JOINTS
1   X=0   Y=0
101   X=300  Y=0        G=1.101.1
102   X=0   Y=5
202   X=300  Y=5        G=102.202.1

LOADS
102 F=1.64687E2,0,0

FRAME
NM=2 NL=1 NSEC=3
1  A=0.35    E=2E6      I=0.0142
2  A=0.283   E=2E6      I=1.2563E-3
1  WL=0,-0.06065,0
1  1  102    M=2      G=100.1.1,1      IF=1,0
102  102  103  M=1     NSL=1          G=95.1.1,1
```

```
PORTAL TERSTIF ARAH MELINTANG
SYSTEM
1=1

RESTRAINS
1 9 1  R=1,1,1,1,1,1
10 18 1 R=0,0,1,1,1,0

JOINTS
1 X=0 Y=0
9 X=20 Y=0 G=1,9,1
10 X=0 Y=5
18 X=20 Y=5 G=10,18,1

LOADS
10 F=14675,0,0

FRAME
NM=2 NL=1 NSEC=3
1 A=0.15   I=3.125E-3 E=2000000000
2 A=0.383  I=1.246E-3 E=2000000000
1 WL=0,-5132,00
1 1 10 M=2 G=8,1,1,1 LP=1,0
10 10 11  M=1 NSD=1  G=7,1,1,1
```

```
PORTAL PIER ARAH MEMANJANG
SYSTEM
1=1

RESTRAINS
1 61 1 R=1,1,1,1,1,1
62 122 1 R=0,0,1,1,1,0

JOINTS
1 X=0 Y=0
61 X=50 Y=0 G=1,61,1
62 X=0 Y=5
122 X=50 Y=5 G=62,122,1

LOADS
62 F=106.879,0,0

FRAME
NM=2 NL=1 NSEC=3
1 A=0.35   E=2E6  I=0.0143
2 A=0.283   E=2E6   I=1.25637E-3
1 WL=0,-06064,0
1 1 62 M=2 G=60,1,1,1
62 62 63   NSL=1   G=59,1,1,1
```

```
PORTAL PLEB ARAH MELINTANG
SYSTEM
1=1

RESTRAINS
1 71 1 R=1,1,1,1,1,1
18 34 1 R=0,0,1,1,1,0

JOINTS
1 X=0 Y=0
17 X=150 Y=0 G=1,17,1
18 X=0 Y=5
34 X=5 Y=5 G=18,34,1

LOADS
18 F=29786.0,0

FRAME
NM=2 NL=1 NSEC=3
1 A=0.15    E=2E9    I=3.125E-3
2 A=0.283    E=2E9    I=1.3568E-3
1 WL=0,-5122.0
1 1 16 M=2 G=16,1,1,1
18 18 19    NSL=1    G=15,1,1,1
```

PORTAL TRESTLE ARAH MEMANJANG

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	AXIAL FORCE	DIST FNDT	1-2 PLANE SHEAR	1-2 PLANE MOMENT
1					
	1	6.55			
			.0	5.06	-12.83
			2.5	5.06	-.17
			5.0	5.06	12.49
2					
	1	-3.07			
			.0	5.06	-12.68
			2.5	5.06	-.03
			5.0	5.06	12.62
3					
	1	.08			
			.0	4.87	-12.24
			2.5	4.87	-.06
			5.0	4.87	12.13
4					
	1	-.34			
			.0	4.72	-11.86
			2.5	4.72	-.05
			5.0	4.72	11.76
5					
	1	-.30			
			.0	4.58	-11.49
			2.5	4.58	-.05
			5.0	4.58	11.39
6					
	1	-.30			
			.0	4.43	-11.13
			2.5	4.43	-.05
			5.0	4.43	11.03
7					
	1	-.30			
			.0	4.29	-10.78
			2.5	4.29	-.05
			5.0	4.29	10.69
8					
	1	-.29			
			.0	4.16	-10.45
			2.5	4.16	-.05
			5.0	4.16	10.35
9					
	1	-.29			
			.0	4.03	-10.12
			2.5	4.03	-.04
			5.0	4.03	10.03
10					
	1	-.28			
			.0	3.90	-9.80
			2.5	3.90	-.04

		5.0	3.90	9.72
11				
	1	-.28		
		.0	3.78	-9.50
		2.5	3.78	-.04
		5.0	3.78	9.41
12				
	1	-.28		
		.0	3.66	-9.20
		2.5	3.66	-.04
		5.0	3.66	9.12
13				
	1	-.28		
		.0	3.55	-8.91
		2.5	3.55	-.04
		5.0	3.55	8.83
14				
	1	-.27		
		.0	3.44	-8.63
		2.5	3.44	-.04
		5.0	3.44	8.56
15				
	1	-.27		
		.0	3.33	-8.36
		2.5	3.33	-.04
		5.0	3.33	8.29
16				
	1	-.27		
		.0	3.23	-8.10
		2.5	3.23	-.04
		5.0	3.23	8.03
17				
	1	-.26		
		.0	3.13	-7.85
		2.5	3.13	-.03
		5.0	3.13	7.78
18				
	1	-.26		
		.0	3.03	-7.61
		2.5	3.03	-.03
		5.0	3.03	7.54
19				
	1	-.26		
		.0	2.94	-7.37
		2.5	2.94	-.03
		5.0	2.94	7.31
20				
	1	-.26		
		.0	2.84	-7.14
		2.5	2.84	-.03
		5.0	2.84	7.08
21				

	1	-.25		
		.0	2.76	-6.92
		2.5	2.76	-.03
		5.0	2.76	6.86
22				
	1	-.25		
		.0	2.67	-6.70
		2.5	2.67	-.03
		5.0	2.67	6.65
23				
	1	-.25		
		.0	2.59	-6.50
		2.5	2.59	-.03
		5.0	2.59	6.44
24				
	1	-.25		
		.0	2.51	-6.29
		2.5	2.51	-.03
		5.0	2.51	6.24
25				
	1	-.25		
		.0	2.43	-6.10
		2.5	2.43	-.03
		5.0	2.43	6.05
26				
	1	-.24		
		.0	2.35	-5.91
		2.5	2.35	-.03
		5.0	2.35	5.86
27				
	1	-.24		
		.0	2.28	-5.73
		2.5	2.28	-.02
		5.0	2.28	5.68
28				
	1	-.24		
		.0	2.21	-5.55
		2.5	2.21	-.02
		5.0	2.21	5.50
29				
	1	-.24		
		.0	2.14	-5.38
		2.5	2.14	-.02
		5.0	2.14	5.33
30				
	1	-.24		
		.0	2.08	-5.21
		2.5	2.08	-.02
		5.0	2.08	5.17
31				
	1	-.23		
		.0	2.01	-5.05
		2.5	2.01	-.02
		5.0	2.01	5.01
32				

	1	-.23		
		.0	1.95	-4.90
		2.5	1.95	-.02
		5.0	1.95	4.85
33				
	1	-.23		
		.0	1.89	-4.75
		2.5	1.89	-.02
		5.0	1.89	4.71
34				
	1	-.23		
		.0	1.83	-4.60
		2.5	1.83	-.02
		5.0	1.83	4.56
35				
	1	-.23		
		.0	1.78	-4.46
		2.5	1.78	-.02
		5.0	1.78	4.42
36				
	1	-.23		
		.0	1.72	-4.32
		2.5	1.72	-.02
		5.0	1.72	4.29
37				
	1	-.22		
		.0	1.67	-4.19
		2.5	1.67	-.02
		5.0	1.67	4.16
38				
	1	-.22		
		.0	1.62	-4.07
		2.5	1.62	-.02
		5.0	1.62	4.03
39				
	1	-.22		
		.0	1.57	-3.94
		2.5	1.57	-.02
		5.0	1.57	3.91
40				
	1	-.22		
		.0	1.52	-3.82
		2.5	1.52	-.02
		5.0	1.52	3.79
41				
	1	-.22		
		.0	1.48	-3.71
		2.5	1.48	-.02
		5.0	1.48	3.67
42				
	1	-.22		
		.0	1.43	-3.60
		2.5	1.43	-.02
		5.0	1.43	3.56
43				

	1	-.22		
		.0	1.79	-3.49
		2.5	1.39	-.02
		5.0	1.79	3.46
44				
	1	-.22		
		.0	1.35	-3.36
		2.5	1.35	-.01
		5.0	1.35	3.35
45				
	1	-.21		
		.0	1.31	-3.28
		2.5	1.31	-.01
		5.0	1.31	3.25
46				
	1	-.21		
		.0	1.27	-3.18
		2.5	1.27	-.01
		5.0	1.27	3.16
47				
	1	-.21		
		.0	1.23	-3.09
		2.5	1.23	-.01
		5.0	1.23	3.06
48				
	1	-.21		
		.0	1.19	-3.00
		2.5	1.19	-.01
		5.0	1.19	2.97
49				
	1	-.21		
		.0	1.16	-2.91
		2.5	1.16	-.01
		5.0	1.16	2.89
50				
	1	-.21		
		.0	1.13	-2.83
		2.5	1.13	-.01
		5.0	1.13	2.80
51				
	1	-.21		
		.0	1.09	-2.74
		2.5	1.09	-.01
		5.0	1.09	2.72
52				
	1	-.21		
		.0	1.06	-2.66
		2.5	1.06	-.01
		5.0	1.06	2.64
53				
	1	-.21		
		.0	1.03	-2.59
		2.5	1.03	-.01
		5.0	1.03	2.56
54				

	1	-.21		
		.0	1.00	-2.51
		2.5	1.00	-.01
		5.0	1.00	2.49
55				
	1	-.21		
		.0	.97	-2.44
		2.5	.97	-.01
		5.0	.97	2.42
56				
	1	-.20		
		.0	.94	-2.37
		2.5	.94	-.01
		5.0	.94	2.35
57				
	1	-.20		
		.0	.92	-2.31
		2.5	.92	-.01
		5.0	.92	2.29
58				
	1	-.20		
		.0	.89	-2.24
		2.5	.89	-.01
		5.0	.89	2.22
59				
	1	-.20		
		.0	.87	-2.18
		2.5	.87	-.01
		5.0	.87	2.16
60				
	1	-.20		
		.0	.84	-2.12
		2.5	.84	-.01
		5.0	.84	2.10
61				
	1	-.20		
		.0	.82	-2.06
		2.5	.82	-.01
		5.0	.82	2.04
62				
	1	-.20		
		.0	.80	-2.01
		2.5	.80	-.01
		5.0	.80	1.99
63				
	1	-.20		
		.0	.78	-1.95
		2.5	.78	-.01
		5.0	.78	1.94
64				
	1	-.20		
		.0	.76	-1.90
		2.5	.76	-.01
		5.0	.76	1.88
65				

	1	-.20		
		.0	.74	-1.85
		2.5	.74	-.01
		5.0	.74	1.83
66				
	1	-.20		
		.0	.72	-1.80
		2.5	.72	-.01
		5.0	.72	1.79
67				
	1	-.20		
		.0	.70	-1.76
		2.5	.70	-.01
		5.0	.70	1.74
68				
	1	-.20		
		.0	.68	-1.71
		2.5	.68	-.01
		5.0	.68	1.70
69				
	1	-.20		
		.0	.67	-1.67
		2.5	.67	-.01
		5.0	.67	1.66
70				
	1	-.20		
		.0	.65	-1.63
		2.5	.65	-.01
		5.0	.65	1.62
71				
	1	-.19		
		.0	.63	-1.59
		2.5	.63	-.01
		5.0	.63	1.58
72				
	1	-.19		
		.0	.62	-1.55
		2.5	.62	-.01
		5.0	.62	1.54
73				
	1	-.19		
		.0	.60	-1.52
		2.5	.60	-.01
		5.0	.60	1.51
74				
	1	-.19		
		.0	.59	-1.48
		2.5	.59	-.01
		5.0	.59	1.47
75				
	1	-.19		
		.0	.58	-1.45
		2.5	.58	-.01
		5.0	.58	1.44
76				

	1	-.19		
		.0	.57	-1.42
		2.5	.57	-.01
		5.0	.57	1.41
77				
	1	-.19		
		.0	.55	-1.39
		2.5	.55	-.01
		5.0	.55	1.38
78				
	1	-.19		
		.0	.54	-1.36
		2.5	.54	-.01
		5.0	.54	1.35
79				
	1	-.19		
		.0	.53	-1.34
		2.5	.53	-.01
		5.0	.53	1.32
80				
	1	-.19		
		.0	.52	-1.31
		2.5	.52	-.01
		5.0	.52	1.30
81				
	1	-.19		
		.0	.51	-1.29
		2.5	.51	-.01
		5.0	.51	1.27
82				
	1	-.19		
		.0	.50	-1.26
		2.5	.50	-.01
		5.0	.50	1.25
83				
	1	-.19		
		.0	.49	-1.24
		2.5	.49	-.01
		5.0	.49	1.23
84				
	1	-.19		
		.0	.49	-1.22
		2.5	.49	-.01
		5.0	.49	1.21
85				
	1	-.19		
		.0	.48	-1.20
		2.5	.48	-.01
		5.0	.48	1.19
86				
	1	-.19		
		.0	.47	-1.18
		2.5	.47	-.01
		5.0	.47	1.17
87				

	1	-.19		
		.0	.46	-1.17
		2.5	.46	-.01
		5.0	.46	1.16
88				
	1	-.19		
		.0	.46	-1.15
		2.5	.46	-.01
		5.0	.46	1.14
89				
	1	-.19		
		.0	.45	-1.14
		2.5	.45	-.00
		5.0	.45	1.13
90				
	1	-.19		
		.0	.45	-1.12
		2.5	.45	-.00
		5.0	.45	1.11
91				
	1	-.19		
		.0	.44	-1.11
		2.5	.44	-.00
		5.0	.44	1.10
92				
	1	-.19		
		.0	.44	-1.10
		2.5	.44	-.00
		5.0	.44	1.09
93				
	1	-.18		
		.0	.43	-1.09
		2.5	.43	-.00
		5.0	.43	1.08
94				
	1	-.18		
		.0	.43	-1.08
		2.5	.43	-.00
		5.0	.43	1.07
95				
	1	-.18		
		.0	.43	-1.07
		2.5	.43	-.00
		5.0	.43	1.07
96				
	1	-.18		
		.0	.43	-1.07
		2.5	.43	-.00
		5.0	.43	1.06
97				
	1	-.18		
		.0	.42	-1.06
		2.5	.42	-.00
		5.0	.42	1.05
98				

	1	-.18		
		.0	.42	-1.06
		2.5	.42	-.00
		5.0	.42	1.05
99				
	1	-.21		
		.0	.42	-1.06
		2.5	.42	-.00
		5.0	.42	1.05
100				
	1	.02		
		.0	.42	-1.06
		2.5	.42	-.00
		5.0	.42	1.05
101				
	1	-.61		
		.0	.41	-1.04
		2.5	.41	-.01
		5.0	.41	1.01
102				
	1	-159.62		
		.0	-6.55	12.49
		1.5	-6.64	2.59
		3.0	-6.73	-7.44
103				
	1	-154.56		
		.0	-3.66	5.18
		1.5	-3.75	-.38
		3.0	-3.84	-6.08
104				
	1	-149.69		
		.0	-3.92	6.05
		1.5	-4.01	.10
		3.0	-4.10	-5.99
105				
	1	-144.97		
		.0	-3.77	5.77
		1.5	-3.86	.05
		3.0	-3.95	-5.80
106				
	1	-140.39		
		.0	-3.65	5.59
		1.5	-3.74	.05
		3.0	-3.83	-5.62
107				
	1	-135.96		
		.0	-3.53	5.41
		1.5	-3.62	.05
		3.0	-3.71	-5.45
108				
	1	-131.66		
		.0	-3.42	5.24
		1.5	-3.51	.05
		3.0	-3.60	-5.28
109				

	1	-127.50		
		.0	-3.31	5.08
		1.5	-3.40	.05
		3.0	-3.49	-5.11
110				
	1	-123.47		
		.0	-3.20	4.92
		1.5	-3.29	.05
		3.0	-3.38	-4.96
111				
	1	-119.57		
		.0	-3.10	4.76
		1.5	-3.19	.05
		3.0	-3.28	-4.80
112				
	1	-115.79		
		.0	-3.00	4.61
		1.5	-3.09	.05
		3.0	-3.18	-4.65
113				
	1	-112.12		
		.0	-2.90	4.47
		1.5	-2.99	.05
		3.0	-3.08	-4.51
114				
	1	-108.57		
		.0	-2.81	4.33
		1.5	-2.90	.05
		3.0	-2.99	-4.37
115				
	1	-105.13		
		.0	-2.72	4.19
		1.5	-2.81	.04
		3.0	-2.90	-4.24
116				
	1	-101.80		
		.0	-2.63	4.06
		1.5	-2.72	.04
		3.0	-2.81	-4.10
117				
	1	-98.58		
		.0	-2.54	3.93
		1.5	-2.64	.04
		3.0	-2.73	-3.98
118				
	1	-95.45		
		.0	-2.46	3.80
		1.5	-2.55	.04
		3.0	-2.64	-3.86
119				
	1	-92.42		
		.0	-2.38	3.68
		1.5	-2.47	.04
		3.0	-2.56	-3.74
120				

	1	-89.48		
		.0	-2.31	3.57
		1.5	-2.40	.04
		3.0	-2.49	-3.67
121				
	1	-86.64		
		.0	-2.23	3.46
		1.5	-2.32	.04
		3.0	-2.41	-3.51
122				
	1	-83.89		
		.0	-2.16	3.35
		1.5	-2.25	.04
		3.0	-2.34	-3.40
123				
	1	-81.22		
		.0	-2.09	3.24
		1.5	-2.18	.04
		3.0	-2.27	-3.30
124				
	1	-78.63		
		.0	-2.02	3.14
		1.5	-2.11	.04
		3.0	-2.20	-3.20
125				
	1	-76.12		
		.0	-1.96	3.04
		1.5	-2.05	.04
		3.0	-2.14	-3.10
126				
	1	-73.69		
		.0	-1.89	2.95
		1.5	-1.98	.04
		3.0	-2.07	-3.01
127				
	1	-71.34		
		.0	-1.83	2.85
		1.5	-1.92	.04
		3.0	-2.01	-2.91
128				
	1	-69.06		
		.0	-1.77	2.76
		1.5	-1.86	.04
		3.0	-1.95	-2.83
129				
	1	-66.85		
		.0	-1.71	2.68
		1.5	-1.81	.04
		3.0	-1.90	-2.74
130				
	1	-64.71		
		.0	-1.66	2.59
		1.5	-1.75	.04
		3.0	-1.84	-2.66
131				

	1	-62.63		
		.0	-1.60	2.51
		1.5	-1.70	.04
		3.0	-1.79	-2.58
132				
	1	-60.62		
		.0	-1.55	2.43
		1.5	-1.64	.04
		3.0	-1.73	-2.50
133				
	1	-58.67		
		.0	-1.50	2.36
		1.5	-1.59	.04
		3.0	-1.68	-2.42
134				
	1	-56.78		
		.0	-1.45	2.28
		1.5	-1.54	.03
		3.0	-1.64	-2.35
135				
	1	-54.94		
		.0	-1.41	2.21
		1.5	-1.50	.03
		3.0	-1.59	-2.28
136				
	1	-53.17		
		.0	-1.36	2.14
		1.5	-1.45	.03
		3.0	-1.54	-2.21
137				
	1	-51.44		
		.0	-1.32	2.08
		1.5	-1.41	.03
		3.0	-1.50	-2.15
138				
	1	-49.77		
		.0	-1.27	2.01
		1.5	-1.36	.03
		3.0	-1.46	-2.08
139				
	1	-48.16		
		.0	-1.23	1.95
		1.5	-1.32	.03
		3.0	-1.41	-2.02
140				
	1	-46.59		
		.0	-1.19	1.89
		1.5	-1.28	.03
		3.0	-1.37	-1.96
141				
	1	-45.06		
		.0	-1.15	1.83
		1.5	-1.24	.03
		3.0	-1.33	-1.90
142				

	1	-43.59		
		.0	-1.12	1.77
		1.5	-1.21	.03
		3.0	-1.30	-1.85
143				
	1	-42.15		
		.0	-1.08	1.72
		1.5	-1.17	.03
		3.0	-1.26	-1.79
144				
	1	-40.77		
		.0	-1.04	1.67
		1.5	-1.13	.03
		3.0	-1.23	-1.74
145				
	1	-39.42		
		.0	-1.01	1.61
		1.5	-1.10	.03
		3.0	-1.19	-1.69
146				
	1	-38.11		
		.0	-.98	1.56
		1.5	-1.07	.03
		3.0	-1.16	-1.64
147				
	1	-36.84		
		.0	-.95	1.52
		1.5	-1.04	.03
		3.0	-1.13	-1.59
148				
	1	-35.61		
		.0	-.91	1.47
		1.5	-1.01	.03
		3.0	-1.10	-1.55
149				
	1	-34.42		
		.0	-.89	1.43
		1.5	-.98	.03
		3.0	-1.07	-1.50
150				
	1	-33.26		
		.0	-.86	1.38
		1.5	-.95	.03
		3.0	-1.04	-1.46
151				
	1	-32.13		
		.0	-.83	1.34
		1.5	-.92	.03
		3.0	-1.01	-1.42
152				
	1	-31.04		
		.0	-.80	1.30
		1.5	-.89	.03
		3.0	-.98	-1.38
153				

	1	-29.98		
		.0	-.78	1.26
		1.5	-.87	.03
		3.0	-.96	-1.34
154				
	1	-28.95		
		.0	-.75	1.22
		1.5	-.84	.03
		3.0	-.93	-1.30
155				
	1	-27.95		
		.0	-.73	1.19
		1.5	-.82	.03
		3.0	-.91	-1.27
156				
	1	-26.98		
		.0	-.70	1.15
		1.5	-.79	.03
		3.0	-.89	-1.23
157				
	1	-26.03		
		.0	-.68	1.12
		1.5	-.77	.03
		3.0	-.86	-1.20
158				
	1	-25.11		
		.0	-.66	1.09
		1.5	-.75	.03
		3.0	-.84	-1.17
159				
	1	-24.22		
		.0	-.64	1.05
		1.5	-.73	.03
		3.0	-.82	-1.14
160				
	1	-23.35		
		.0	-.62	1.02
		1.5	-.71	.03
		3.0	-.80	-1.11
161				
	1	-22.51		
		.0	-.60	.99
		1.5	-.69	.03
		3.0	-.78	-1.08
162				
	1	-21.69		
		.0	-.58	.97
		1.5	-.67	.03
		3.0	-.76	-1.05
163				
	1	-20.89		
		.0	-.56	.94
		1.5	-.65	.03
		3.0	-.74	-1.02
164				

	1	-20.11		
		.0	-.55	.91
		1.5	-.64	.03
		3.0	-.73	-1.00
165				
	1	-19.36		
		.0	-.53	.89
		1.5	-.62	.03
		3.0	-.71	-.97
166				
	1	-18.62		
		.0	-.51	.86
		1.5	-.60	.03
		3.0	-.69	-.95
167				
	1	-17.90		
		.0	-.50	.84
		1.5	-.59	.03
		3.0	-.68	-.92
168				
	1	-17.20		
		.0	-.48	.82
		1.5	-.57	.03
		3.0	-.66	-.90
169				
	1	-16.52		
		.0	-.47	.80
		1.5	-.56	.03
		3.0	-.65	-.88
170				
	1	-15.85		
		.0	-.45	.78
		1.5	-.55	.03
		3.0	-.64	-.86
171				
	1	-15.20		
		.0	-.44	.76
		1.5	-.53	.03
		3.0	-.62	-.84
172				
	1	-14.57		
		.0	-.43	.74
		1.5	-.52	.03
		3.0	-.61	-.82
173				
	1	-13.95		
		.0	-.42	.72
		1.5	-.51	.03
		3.0	-.60	-.80
174				
	1	-13.35		
		.0	-.40	.70
		1.5	-.50	.03
		3.0	-.59	-.79
175				

	1	-12.76		
		.0	-.39	.68
		1.5	-.48	.03
		3.0	-.58	-.77
176				
	1	-12.18		
		.0	-.38	.67
		1.5	-.47	.03
		3.0	-.57	-.75
177				
	1	-11.61		
		.0	-.37	.65
		1.5	-.46	.03
		3.0	-.56	-.74
178				
	1	-11.06		
		.0	-.36	.64
		1.5	-.45	.03
		3.0	-.55	-.73
179				
	1	-10.52		
		.0	-.35	.63
		1.5	-.45	.02
		3.0	-.54	-.71
180				
	1	-9.98		
		.0	-.35	.61
		1.5	-.44	.02
		3.0	-.53	-.70
181				
	1	-9.46		
		.0	-.34	.60
		1.5	-.43	.02
		3.0	-.52	-.69
182				
	1	-8.95		
		.0	-.33	.59
		1.5	-.42	.02
		3.0	-.51	-.67
183				
	1	-8.45		
		.0	-.32	.58
		1.5	-.41	.02
		3.0	-.50	-.66
184				
	1	-7.95		
		.0	-.32	.57
		1.5	-.41	.02
		3.0	-.50	-.65
185				
	1	-7.47		
		.0	-.31	.56
		1.5	-.40	.02
		3.0	-.49	-.64
186				

	1	-6.99		
		.0	-.30	.55
		1.5	-.39	.02
		3.0	-.48	-.63
187				
	1	-6.52		
		.0	-.30	.54
		1.5	-.39	.02
		3.0	-.48	-.63
188				
	1	-6.05		
		.0	-.29	.53
		1.5	-.38	.02
		3.0	-.47	-.62
189				
	1	-5.60		
		.0	-.29	.52
		1.5	-.38	.02
		3.0	-.47	-.61
190				
	1	-5.14		
		.0	-.28	.52
		1.5	-.37	.02
		3.0	-.46	-.60
191				
	1	-4.70		
		.0	-.28	.51
		1.5	-.37	.02
		3.0	-.46	-.60
192				
	1	-4.25		
		.0	-.27	.50
		1.5	-.37	.02
		3.0	-.46	-.59
193				
	1	-3.81		
		.0	-.27	.50
		1.5	-.36	.02
		3.0	-.45	-.59
194				
	1	-3.38		
		.0	-.27	.49
		1.5	-.36	.02
		3.0	-.45	-.58
195				
	1	-2.95		
		.0	-.27	.49
		1.5	-.36	.02
		3.0	-.45	-.58
196				
	1	-2.52		
		.0	-.26	.49
		1.5	-.35	.02
		3.0	-.44	-.58
197				

	1	-2.10		
			.0	-.26	.48
			1.5	-.35	.02
			3.0	-.44	-.57
198	---	---	---	---	---
	1	-1.67		
			.0	-.26	.48
			1.5	-.35	.02
			3.0	-.44	-.57
199	---	---	---	---	---
	1	-1.25		
			.0	-.26	.48
			1.5	-.35	.02
			3.0	-.44	-.58
200	---	---	---	---	---
	1	-.83		
			.0	-.23	.47
			1.5	-.32	.06
			3.0	-.41	-.49
201	---	---	---	---	---
	1	-.41		
			.0	-.43	.56
			1.5	-.52	-.16
			3.0	-.61	-1.01

PROGRAM:SAP90/FILE:PTM.SOL
PORTAL TRESTLE ARAH MEMANJANG

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	R(Z)
1	.000000	.000000	.000000
2	.000000	.000000	.000000
3	.000000	.000000	.000000
4	.000000	.000000	.000000
5	.000000	.000000	.000000
6	.000000	.000000	.000000
7	.000000	.000000	.000000
8	.000000	.000000	.000000
9	.000000	.000000	.000000
10	.000000	.000000	.000000
11	.000000	.000000	.000000
12	.000000	.000000	.000000
13	.000000	.000000	.000000
14	.000000	.000000	.000000
15	.000000	.000000	.000000
16	.000000	.000000	.000000
17	.000000	.000000	.000000
18	.000000	.000000	.000000
19	.000000	.000000	.000000
20	.000000	.000000	.000000
21	.000000	.000000	.000000
22	.000000	.000000	.000000
23	.000000	.000000	.000000
24	.000000	.000000	.000000
25	.000000	.000000	.000000
26	.000000	.000000	.000000
27	.000000	.000000	.000000
28	.000000	.000000	.000000
29	.000000	.000000	.000000
30	.000000	.000000	.000000
31	.000000	.000000	.000000
32	.000000	.000000	.000000
33	.000000	.000000	.000000
34	.000000	.000000	.000000
35	.000000	.000000	.000000
36	.000000	.000000	.000000
37	.000000	.000000	.000000
38	.000000	.000000	.000000
39	.000000	.000000	.000000
40	.000000	.000000	.000000
41	.000000	.000000	.000000
42	.000000	.000000	.000000
43	.000000	.000000	.000000
44	.000000	.000000	.000000
45	.000000	.000000	.000000
46	.000000	.000000	.000000

47	,000000	,000000	,000000
48	,000000	,000000	,000000
49	,000000	,000000	,000000
50	,000000	,000000	,000000
51	,000000	,000000	,000000
52	,000000	,000000	,000000
53	,000000	,000000	,000000
54	,000000	,000000	,000000
55	,000000	,000000	,000000
56	,000000	,000000	,000000
57	,000000	,000000	,000000
58	,000000	,000000	,000000
59	,000000	,000000	,000000
60	,000000	,000000	,000000
61	,000000	,000000	,000000
62	,000000	,000000	,000000
63	,000000	,000000	,000000
64	,000000	,000000	,000000
65	,000000	,000000	,000000
66	,000000	,000000	,000000
67	,000000	,000000	,000000
68	,000000	,000000	,000000
69	,000000	,000000	,000000
70	,000000	,000000	,000000
71	,000000	,000000	,000000
72	,000000	,000000	,000000
73	,000000	,000000	,000000
74	,000000	,000000	,000000
75	,000000	,000000	,000000
76	,000000	,000000	,000000
77	,000000	,000000	,000000
78	,000000	,000000	,000000
79	,000000	,000000	,000000
80	,000000	,000000	,000000
81	,000000	,000000	,000000
82	,000000	,000000	,000000
83	,000000	,000000	,000000
84	,000000	,000000	,000000
85	,000000	,000000	,000000
86	,000000	,000000	,000000
87	,000000	,000000	,000000
88	,000000	,000000	,000000
89	,000000	,000000	,000000
90	,000000	,000000	,000000
91	,000000	,000000	,000000
92	,000000	,000000	,000000
93	,000000	,000000	,000000
94	,000000	,000000	,000000
95	,000000	,000000	,000000
96	,000000	,000000	,000000
97	,000000	,000000	,000000
98	,000000	,000000	,000000
99	,000000	,000000	,000000
100	,000000	,000000	,000000
101	,000000	,000000	,000000

102	.021830	.000058	-.000337
103	.021146	-.000027	-.000068
104	.020483	.000001	-.000110
105	.019842	-.000003	-.000107
106	.019220	-.000003	-.000100
107	.018619	-.000003	-.000096
108	.018036	-.000003	-.000093
109	.017472	-.000003	-.000090
110	.016925	-.000003	-.000088
111	.016396	-.000003	-.000085
112	.015884	-.000002	-.000082
113	.015387	-.000002	-.000080
114	.014907	-.000002	-.000077
115	.014442	-.000002	-.000075
116	.013991	-.000002	-.000072
117	.013555	-.000002	-.000070
118	.013132	-.000002	-.000068
119	.012723	-.000002	-.000066
120	.012327	-.000002	-.000064
121	.011944	-.000002	-.000062
122	.011572	-.000002	-.000060
123	.011213	-.000002	-.000058
124	.010865	-.000002	-.000056
125	.010528	-.000002	-.000055
126	.010201	-.000002	-.000053
127	.009886	-.000002	-.000051
128	.009580	-.000002	-.000050
129	.009284	-.000002	-.000048
130	.008997	-.000002	-.000047
131	.008720	-.000002	-.000045
132	.008452	-.000002	-.000044
133	.008192	-.000002	-.000042
134	.007941	-.000002	-.000041
135	.007697	-.000002	-.000040
136	.007462	-.000002	-.000039
137	.007234	-.000002	-.000037
138	.007013	-.000002	-.000036
139	.006800	-.000002	-.000035
140	.006594	-.000002	-.000034
141	.006394	-.000002	-.000033
142	.006201	-.000002	-.000032
143	.006014	-.000002	-.000031
144	.005833	-.000002	-.000030
145	.005659	-.000002	-.000029
146	.005490	-.000002	-.000028
147	.005326	-.000002	-.000028
148	.005169	-.000002	-.000027
149	.005016	-.000002	-.000026
150	.004868	-.000002	-.000025
151	.004726	-.000002	-.000024
152	.004588	-.000002	-.000024
153	.004455	-.000002	-.000023
154	.004327	-.000002	-.000022
155	.004203	-.000002	-.000022
156	.004083	-.000002	-.000021

157	.003967	-.000007	-.000031
158	.003856	-.000007	-.000030
159	.003748	-.000007	-.000029
160	.003644	-.000007	-.000028
161	.003544	-.000007	-.000028
162	.003448	-.000007	-.000028
163	.003355	-.000007	-.000027
164	.003265	-.000007	-.000027
165	.003179	-.000007	-.000026
166	.003096	-.000007	-.000026
167	.003016	-.000007	-.000026
168	.002939	-.000007	-.000025
169	.002866	-.000007	-.000025
170	.002795	-.000007	-.000024
171	.002727	-.000007	-.000024
172	.002662	-.000007	-.000024
173	.002599	-.000007	-.000023
174	.002540	-.000007	-.000023
175	.002482	-.000007	-.000023
176	.002428	-.000007	-.000023
177	.002375	-.000007	-.000022
178	.002326	-.000007	-.000022
179	.002278	-.000007	-.000022
180	.002233	-.000007	-.000022
181	.002190	-.000007	-.000021
182	.002150	-.000007	-.000021
183	.002112	-.000007	-.000021
184	.002075	-.000007	-.000021
185	.002041	-.000007	-.000021
186	.002009	-.000007	-.000020
187	.001979	-.000007	-.000020
188	.001951	-.000007	-.000020
189	.001925	-.000007	-.000020
190	.001901	-.000007	-.000020
191	.001879	-.000007	-.000020
192	.001859	-.000007	-.000020
193	.001841	-.000007	-.000020
194	.001825	-.000007	-.000019
195	.001810	-.000007	-.000019
196	.001798	-.000007	-.000019
197	.001787	-.000007	-.000019
198	.001778	-.000007	-.000019
199	.001771	-.000007	-.000019
200	.001765	-.000007	-.000019
201	.001762	.000000	-.000006
202	.001760	-.000005	-.000025

PROGRAM:SAP90/FILE:PTM.SOL
PORTAL TRESTLE ARAH MEMANJANG

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	M(Z)
1	-5.0624	-6.5512	12.8256
2	-5.0599	3.0721	12.6839
3	-4.8744	-.0798	12.2415
4	-4.7244	.3389	11.8626
5	-4.5764	.3022	11.4909
6	-4.4331	.2986	11.1312
7	-4.2944	.2953	10.7828
8	-4.1600	.2916	10.4455
9	-4.0299	.2882	10.1188
10	-3.9039	.2848	9.8024
11	-3.7819	.2816	9.4961
12	-3.6637	.2784	9.1994
13	-3.5493	.2754	8.9121
14	-3.4385	.2724	8.6339
15	-3.3313	.2695	8.3646
16	-3.2274	.2668	8.1037
17	-3.1268	.2641	7.8511
18	-3.0294	.2615	7.6066
19	-2.9351	.2589	7.3698
20	-2.8438	.2565	7.1405
21	-2.7554	.2541	6.9185
22	-2.6698	.2518	6.7036
23	-2.5869	.2496	6.4955
24	-2.5066	.2474	6.2940
25	-2.4290	.2454	6.0990
26	-2.3538	.2433	5.9102
27	-2.2810	.2414	5.7274
28	-2.2105	.2395	5.5504
29	-2.1423	.2376	5.3791
30	-2.0763	.2358	5.2134
31	-2.0124	.2341	5.0529
32	-1.9505	.2324	4.8976
33	-1.8906	.2308	4.7473
34	-1.8327	.2292	4.6018
35	-1.7766	.2277	4.4610
36	-1.7224	.2262	4.3248
37	-1.6699	.2248	4.1930
38	-1.6191	.2234	4.0654
39	-1.5700	.2220	3.9420
40	-1.5224	.2207	3.8227
41	-1.4764	.2195	3.7072
42	-1.4320	.2182	3.5955
43	-1.3889	.2170	3.4875
44	-1.3473	.2159	3.3831
45	-1.3071	.2148	3.2821
46	-1.2682	.2137	3.1844
47	-1.2306	.2126	3.0900

48	-1.1943	.2116	2.9968
49	-1.1592	.2106	2.9106
50	-1.1252	.2096	2.8254
51	-1.0924	.2087	2.7431
52	-1.0608	.2078	2.6635
53	-1.0302	.2069	2.5867
54	-1.0006	.2060	2.5125
55	-.9721	.2052	2.4409
56	-.9446	.2044	2.3718
57	-.9180	.2036	2.3051
58	-.8924	.2028	2.2407
59	-.8677	.2021	2.1787
60	-.8438	.2014	2.1188
61	-.8209	.2007	2.0612
62	-.7987	.2000	2.0056
63	-.7774	.1993	1.9521
64	-.7569	.1987	1.9005
65	-.7371	.1980	1.8509
66	-.7181	.1974	1.8032
67	-.6999	.1968	1.7573
68	-.6823	.1962	1.7133
69	-.6655	.1957	1.6709
70	-.6493	.1951	1.6303
71	-.6338	.1946	1.5914
72	-.6189	.1940	1.5540
73	-.6047	.1935	1.5183
74	-.5910	.1930	1.4841
75	-.5780	.1925	1.4514
76	-.5656	.1920	1.4202
77	-.5538	.1915	1.3904
78	-.5425	.1911	1.3621
79	-.5317	.1906	1.3352
80	-.5215	.1902	1.3096
81	-.5119	.1897	1.2853
82	-.5028	.1893	1.2624
83	-.4941	.1889	1.2407
84	-.4860	.1885	1.2204
85	-.4784	.1881	1.2012
86	-.4713	.1877	1.1833
87	-.4646	.1873	1.1666
88	-.4584	.1869	1.1511
89	-.4527	.1865	1.1368
90	-.4475	.1861	1.1236
91	-.4427	.1857	1.1116
92	-.4383	.1854	1.1007
93	-.4345	.1850	1.0909
94	-.4310	.1846	1.0822
95	-.4280	.1843	1.0747
96	-.4254	.1839	1.0682
97	-.4233	.1836	1.0628
98	-.4216	.1807	1.0586
99	-.4201	.2123	1.0550
100	-.4213	-.0190	1.0563
101	-.4094	.6132	1.0361
102	164.6870	.0000	.0000

103	.0000	.0000	.0000
104	.0000	.0000	.0000
105	.0000	.0000	.0000
106	.0000	.0000	.0000
107	.0000	.0000	.0000
108	.0000	.0000	.0000
109	.0000	.0000	.0000
110	.1066F-11	.0000F+00	.0000F+00
111	-.1492E-11	.0000E+00	.0000E+00
112	.0000	.0000	.0000
113	.0000	.0000	.0000
114	.0000	.0000	.0000
115	.0000	.0000	.0000
116	.0000	.0000	.0000
117	.0000	.0000	.0000
118	.0000	.0000	.0000
119	.0000	.0000	.0000
120	.0000	.0000	.0000
121	.0000	.0000	.0000
122	.0000	.0000	.0000
123	.0000	.0000	.0000
124	.0000	.0000	.0000
125	.0000	.0000	.0000
126	.0000	.0000	.0000
127	.0000	.0000	.0000
128	.0000	.0000	.0000
129	.0000	.0000	.0000
130	.0000	.0000	.0000
131	.0000	.0000	.0000
132	.0000	.0000	.0000
133	.0000	.0000	.0000
134	.0000	.0000	.0000
135	.0000	.0000	.0000
136	.0000	.0000	.0000
137	.0000	.0000	.0000
138	.0000	.0000	.0000
139	.0000	.0000	.0000
140	.0000	.0000	.0000
141	.0000	.0000	.0000
142	.0000	.0000	.0000
143	.0000	.0000	.0000
144	.0000	.0000	.0000
145	.0000	.0000	.0000
146	.0000	.0000	.0000
147	.0000	.0000	.0000
148	.0000	.0000	.0000
149	.0000	.0000	.0000
150	.0000	.0000	.0000
151	.0000	.0000	.0000
152	.0000	.0000	.0000
153	.0000	.0000	.0000
154	.0000	.0000	.0000
155	.0000	.0000	.0000
156	.0000	.0000	.0000
157	.0000	.0000	.0000

158	.0000	.0000	.0000
159	.0000	.0000	.0000
160	.0000	.0000	.0000
161	.0000	.0000	.0000
162	.0000	.0000	.0000
163	.0000	.0000	.0000
164	.0000	.0000	.0000
165	.0000	.0000	.0000
166	.0000	.0000	.0000
167	.0000	.0000	.0000
168	.0000	.0000	.0000
169	.0000	.0000	.0000
170	.0000	.0000	.0000
171	.0000	.0000	.0000
172	.0000	.0000	.0000
173	.0000	.0000	.0000
174	.0000	.0000	.0000
175	.0000	.0000	.0000
176	.0000	.0000	.0000
177	.0000	.0000	.0000
178	.0000	.0000	.0000
179	.0000	.0000	.0000
180	.0000	.0000	.0000
181	.0000	.0000	.0000
182	.0000	.0000	.0000
183	.0000	.0000	.0000
184	.0000	.0000	.0000
185	.0000	.0000	.0000
186	.0000	.0000	.0000
187	.0000	.0000	.0000
188	.0000	.0000	.0000
189	.0000	.0000	.0000
190	.0000	.0000	.0000
191	.0000	.0000	.0000
192	.0000	.0000	.0000
193	.0000	.0000	.0000
194	.0000	.0000	.0000
195	.0000	.0000	.0000
196	.0000	.0000	.0000
197	.0000	.0000	.0000
198	.0000	.0000	.0000
199	.0000	.0000	.0000
200	.0000	.0000	.0000
201	.0000	.0000	.0000
202	.0000	.0000	.0000
TOTAL	-.1186E-12	.1820E+02	.4136E+03

PROGRAM:SAP90/FILE:PTML.F3F

PORTAL TRESTLE ARAH MELINTANG

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	AXIAL FORCE	DIST END	1-2 PLANE SHEAR	1-2 PLANE MOMENT
1	1	-2840.19			
			.0	1427.80	-3887.63
			2.5	1427.80	-318.14
			5.0	1427.80	3251.35
2	1	-15051.82			
			.0	1754.74	-4410.36
			2.5	1754.74	-23.50
			5.0	1754.74	4363.36
3	1	-12419.71			
			.0	1667.08	-4245.01
			2.5	1667.08	-77.30
			5.0	1667.08	4090.40
4	1	-12894.02			
			.0	1659.95	-4216.67
			2.5	1659.95	-66.79
			5.0	1659.95	4083.09
5	1	-12805.33			
			.0	1642.27	-4173.53
			2.5	1642.27	-67.85
			5.0	1642.27	4037.83
6	1	-12822.51			
			.0	1630.02	-4142.18
			2.5	1630.02	-67.14
			5.0	1630.02	4007.90
7	1	-12784.04			
			.0	1621.33	-4119.50
			2.5	1621.33	-66.19
			5.0	1621.33	3987.12
8	1	-13068.00			
			.0	1610.13	-4095.36
			2.5	1610.13	-70.04
			5.0	1610.13	3955.28
9	1	-7754.39			
			.0	1661.69	-4178.51
			2.5	1661.69	-24.29
			5.0	1661.69	4129.92
10	1	-13247.20			
			.0	2840.19	3251.35

	1.3	-3562.31	2800.02
	2.5	-9964.81	-5654.43
11			
1	-11492.46		
	.0	5087.00	-1291.08
	1.3	-1315.50	1066.12
	2.5	-7718.00	-4579.81
12			
1	-9825.38		
	.0	4701.72	-489.41
	1.3	-1700.78	1386.17
	2.5	-8103.28	-4741.37
13			
1	-8165.43		
	.0	4790.74	-658.28
	1.3	-1611.76	1328.58
	2.5	-8014.26	-4687.69
14			
1	-6523.16		
	.0	4791.06	-649.87
	1.3	-1611.44	1337.40
	2.5	-8013.94	-4678.46
15			
1	-4893.14		
	.0	4808.57	-670.56
	1.3	-1593.93	1338.59
	2.5	-7996.43	-4655.39
16			
1	-3271.81		
	.0	4787.61	-668.26
	1.3	-1614.89	1314.69
	2.5	-8017.39	-4705.48
17			
1	-1651.69		
	.0	5050.61	-750.20
	1.3	-1351.89	1561.50
	2.5	-7754.39	-4129.92

PROGRAM:SAP90/FILE:PTML.SOL
PORTAL TRESTLE ARAH MELINTANG

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	R(Z)
1	.000000	.000000	.000000
2	.000000	.000000	.000000
3	.000000	.000000	.000000
4	.000000	.000000	.000000
5	.000000	.000000	.000000
6	.000000	.000000	.000000
7	.000000	.000000	.000000
8	.000000	.000000	.000000
9	.000000	.000000	.000000
10	.007504	-.000025	-.000633
11	.007393	-.000133	-.000047
12	.007298	-.000110	-.000154
13	.007216	-.000114	-.000133
14	.007148	-.000113	-.000135
15	.007093	-.000113	-.000134
16	.007053	-.000113	-.000132
17	.007025	-.000115	-.000139
18	.007011	-.000069	-.000048

PROGRAM:SAP90/FILE:PTML.SOL
PORTAL TRESTLE ARAH MELINTANG

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	M(Z)
1	-1427.7951	2840.1891	3887.6290
2	-.1755E+04	.1505E+05	.4410E+04
3	-.1667E+04	.1242E+05	.4245E+04
4	-.1660E+04	.1289E+05	.4217E+04
5	-.1642E+04	.1281E+05	.4174E+04
6	-.1630E+04	.1282E+05	.4142E+04
7	-.1621E+04	.1278E+05	.4120E+04
8	-.1610E+04	.1307E+05	.4095E+04
9	-1661.6863	7754.3884	4178.5080
10	.1468E+05	.0000E+00	.0000E+00
11	-.1637E-10	.0000E+00	.0000E+00
12	.5093E-10	.0000E+00	.0000E+00
13	-.9550E-10	.0000E+00	.0000E+00
14	-.5366E-10	.0000E+00	.0000E+00
15	.1728E-10	.0000E+00	.0000E+00
16	.4047E-10	.0000E+00	.0000E+00
17	-.3683E-10	.0000E+00	.0000E+00
18	.2433E-10	.0000E+00	.0000E+00
TOTAL	-.3865E-11	.1024E+06	.3747E+05

PROGRAM:SAP90/FILE:PPAM.F3F

PORTAL PIER ARAH MEMANJANG

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	AXIAL FORCE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT
1					
	1	7.66			
			.0	2.26	-5.70
			2.5	2.26	-.06
			5.0	2.26	5.58
2					
	1	.72			
			.0	2.27	-5.69
			2.5	2.27	-.03
			5.0	2.27	5.64
3					
	1	-1.02			
			.0	2.26	-5.66
			2.5	2.26	-.01
			5.0	2.26	5.64
4					
	1	-.76			
			.0	2.24	-5.60
			2.5	2.24	-.00
			5.0	2.24	5.59
5					
	1	-.32			
			.0	2.21	-5.52
			2.5	2.21	-.00
			5.0	2.21	5.51
6					
	1	-.12			
			.0	2.18	-5.45
			2.5	2.18	-.01
			5.0	2.18	5.44
7					
	1	-.09			
			.0	2.15	-5.38
			2.5	2.15	-.01
			5.0	2.15	5.37
8					
	1	-.11			
			.0	2.13	-5.32
			2.5	2.13	-.01
			5.0	2.13	5.31
9					
	1	-.12			
			.0	2.10	-5.26
			2.5	2.10	-.01
			5.0	2.10	5.24
10					
	1	-.13			
			.0	2.07	-5.19

			2.5	2.07	-.01
			5.0	2.07	5.18
11					
	1	-.12			
			.0	2.05	-5.17
			2.5	2.05	-.01
			5.0	2.05	5.17
12					
	1	-.12			
			.0	2.03	-5.07
			2.5	2.03	-.01
			5.0	2.03	5.06
13					
	1	-.12			
			.0	2.00	-5.01
			2.5	2.00	-.01
			5.0	2.00	5.00
14					
	1	-.12			
			.0	1.98	-4.94
			2.5	1.98	-.01
			5.0	1.98	4.95
15					
	1	-.12			
			.0	1.96	-4.90
			2.5	1.96	-.01
			5.0	1.96	4.89
16					
	1	-.11			
			.0	1.94	-4.85
			2.5	1.94	-.01
			5.0	1.94	4.84
17					
	1	-.11			
			.0	1.92	-4.80
			2.5	1.92	-.01
			5.0	1.92	4.79
18					
	1	-.11			
			.0	1.90	-4.75
			2.5	1.90	-.01
			5.0	1.90	4.73
19					
	1	-.11			
			.0	1.88	-4.70
			2.5	1.88	-.01
			5.0	1.88	4.69
20					
	1	-.11			
			.0	1.86	-4.65
			2.5	1.86	-.01
			5.0	1.86	4.64
21					
	1	-.11			
			.0	1.84	-4.60

		2.5	1.84	-.01
		5.0	1.84	4.59
22				
	1	-.10		
		.0	1.83	-4.56
		2.5	1.83	-.01
		5.0	1.82	4.54
23				
	1	-.10		
		.0	1.80	-4.51
		2.5	1.80	-.01
		5.0	1.80	4.50
24				
	1	-.10		
		.0	1.79	-4.47
		2.5	1.79	-.01
		5.0	1.79	4.46
25				
	1	-.10		
		.0	1.77	-4.43
		2.5	1.77	-.01
		5.0	1.77	4.42
26				
	1	-.10		
		.0	1.75	-4.39
		2.5	1.75	-.01
		5.0	1.75	4.38
27				
	1	-.10		
		.0	1.74	-4.35
		2.5	1.74	-.01
		5.0	1.74	4.34
28				
	1	-.10		
		.0	1.72	-4.31
		2.5	1.72	-.01
		5.0	1.72	4.30
29				
	1	-.09		
		.0	1.71	-4.27
		2.5	1.71	-.01
		5.0	1.71	4.26
30				
	1	-.09		
		.0	1.69	-4.24
		2.5	1.69	-.01
		5.0	1.69	4.23
31				
	1	-.09		
		.0	1.68	-4.20
		2.5	1.68	-.01
		5.0	1.68	4.19
32				
	1	-.09		
		.0	1.67	-4.17

		2.5	1.67	-.01
		5.0	1.67	4.16
33				
	1	-.09		
		.0	1.65	-4.14
		2.5	1.65	-.01
		5.0	1.65	4.13
34				
	1	-.09		
		.0	1.64	-4.11
		2.5	1.64	-.00
		5.0	1.64	4.10
35				
	1	-.09		
		.0	1.63	-4.08
		2.5	1.63	-.00
		5.0	1.63	4.07
36				
	1	-.08		
		.0	1.62	-4.05
		2.5	1.62	-.00
		5.0	1.62	4.04
37				
	1	-.08		
		.0	1.61	-4.02
		2.5	1.61	-.00
		5.0	1.61	4.01
38				
	1	-.08		
		.0	1.60	-4.00
		2.5	1.60	-.00
		5.0	1.60	3.99
39				
	1	-.08		
		.0	1.59	-3.97
		2.5	1.59	-.00
		5.0	1.59	3.96
40				
	1	-.08		
		.0	1.58	-3.95
		2.5	1.58	-.00
		5.0	1.58	3.94
41				
	1	-.08		
		.0	1.57	-3.92
		2.5	1.57	-.00
		5.0	1.57	3.91
42				
	1	-.08		
		.0	1.56	-3.90
		2.5	1.56	-.00
		5.0	1.56	3.89
43				
	1	-.07		
		.0	1.55	-3.88

		2.5	1.55	-.00
		5.0	1.55	3.87
44				
	1	-.07		
		.0	1.54	-3.86
		2.5	1.54	-.00
		5.0	1.54	3.85
45				
	1	-.07		
		.0	1.54	-3.84
		2.5	1.54	-.00
		5.0	1.54	3.84
46				
	1	-.07		
		.0	1.53	-3.83
		2.5	1.53	-.00
		5.0	1.53	3.82
47				
	1	-.07		
		.0	1.52	-3.81
		2.5	1.52	-.00
		5.0	1.52	3.80
48				
	1	-.07		
		.0	1.52	-3.80
		2.5	1.52	-.00
		5.0	1.52	3.79
49				
	1	-.07		
		.0	1.51	-3.78
		2.5	1.51	-.00
		5.0	1.51	3.77
50				
	1	-.06		
		.0	1.51	-3.77
		2.5	1.51	-.00
		5.0	1.51	3.76
51				
	1	-.06		
		.0	1.50	-3.76
		2.5	1.50	-.00
		5.0	1.50	3.75
52				
	1	-.06		
		.0	1.50	-3.75
		2.5	1.50	-.00
		5.0	1.50	3.74
53				
	1	-.06		
		.0	1.49	-3.74
		2.5	1.49	-.00
		5.0	1.49	3.73
54				
	1	-.07		
		.0	1.49	-3.73

		2.5	1.49	-.00
		5.0	1.49	3.72
55				
	1	-.08		
		.0	1.49	-3.72
		2.5	1.49	-.00
		5.0	1.49	3.71
56				
	1	-.06		
		.0	1.49	-3.72
		2.5	1.49	-.00
		5.0	1.49	3.71
57				
	1	.06		
		.0	1.48	-3.71
		2.5	1.48	-.00
		5.0	1.48	3.71
58				
	1	.34		
		.0	1.48	-3.71
		2.5	1.48	-.00
		5.0	1.48	3.70
59				
	1	.50		
		.0	1.48	-3.70
		2.5	1.48	-.01
		5.0	1.48	3.69
60				
	1	-.59		
		.0	1.46	-3.58
		2.5	1.46	-.02
		5.0	1.46	3.54
61				
	1	-4.95		
		.0	1.44	-3.63
		2.5	1.44	-.04
		5.0	1.44	3.55
62				
	1	-104.62		
		.0	-7.56	5.58
		.4	-7.68	2.38
		.8	-7.71	-.83
63				
	1	-102.36		
		.0	-8.43	4.81
		.4	-8.45	1.30
		.8	-8.48	-2.23
64				
	1	-100.10		
		.0	-7.46	3.41
		.4	-7.49	.30
		.8	-7.51	-2.83
65				
	1	-97.86		
		.0	-6.75	2.76

		.4	-5.77	-.06
		.8	-6.80	-2.89
66				
	1	-95.65		
		.0	-6.48	2.63
		.4	-6.50	-.08
		.8	-6.53	-2.79
67				
	1	-93.47		
		.0	-6.41	2.65
		.4	-6.43	-.03
		.8	-6.46	-2.71
68				
	1	-91.32		
		.0	-6.36	2.66
		.4	-6.39	.00
		.8	-6.41	-2.66
69				
	1	-89.20		
		.0	-6.30	2.64
		.4	-6.33	.01
		.8	-6.35	-2.63
70				
	1	-87.10		
		.0	-6.23	2.61
		.4	-6.26	.01
		.8	-6.28	-2.60
71				
	1	-85.02		
		.0	-6.16	2.58
		.4	-6.18	.01
		.8	-6.21	-2.57
72				
	1	-82.97		
		.0	-6.08	2.55
		.4	-6.11	.01
		.8	-6.13	-2.54
73				
	1	-80.95		
		.0	-6.01	2.52
		.4	-6.04	.01
		.8	-6.06	-2.51
74				
	1	-78.94		
		.0	-5.94	2.49
		.4	-5.97	.01
		.8	-5.99	-2.49
75				
	1	-76.96		
		.0	-5.88	2.46
		.4	-5.90	.01
		.8	-5.93	-2.46
76				
	1	-75.00		
		.0	-5.81	2.43

		.4	-5.84	.01
		.8	-5.86	-2.43
77				
	1	-73.07		
		.0	-5.75	2.41
		.4	-5.77	.01
		.8	-5.80	-2.40
78				
	1	-71.15		
		.0	-5.69	2.38
		.4	-5.71	.01
		.8	-5.74	-2.38
79				
	1	-69.25		
		.0	-5.67	2.36
		.4	-5.65	.01
		.8	-5.68	-2.35
80				
	1	-67.38		
		.0	-5.57	2.33
		.4	-5.59	.01
		.8	-5.62	-2.33
81				
	1	-65.52		
		.0	-5.51	2.31
		.4	-5.54	.01
		.8	-5.56	-2.31
82				
	1	-63.68		
		.0	-5.46	2.28
		.4	-5.48	.01
		.8	-5.51	-2.28
83				
	1	-61.86		
		.0	-5.40	2.26
		.4	-5.43	.01
		.8	-5.45	-2.26
84				
	1	-60.06		
		.0	-5.35	2.24
		.4	-5.37	.01
		.8	-5.40	-2.24
85				
	1	-58.27		
		.0	-5.30	2.22
		.4	-5.32	.01
		.8	-5.35	-2.22
86				
	1	-56.50		
		.0	-5.25	2.20
		.4	-5.27	.01
		.8	-5.30	-2.20
87				
	1	-54.75		
		.0	-5.20	2.18

		.4	-5.27	.01
		.8	-5.25	-2.18
88				
	1	-53.02		
		.0	-5.16	2.16
		.4	-5.18	.00
		.8	-5.21	-2.16
89				
	1	-51.29		
		.0	-5.11	2.14
		.4	-5.14	.00
		.8	-5.16	-2.14
90				
	1	-49.59		
		.0	-5.07	2.12
		.4	-5.09	.00
		.8	-5.12	-2.12
91				
	1	-47.89		
		.0	-5.03	2.10
		.4	-5.05	.00
		.8	-5.08	-2.11
92				
	1	-46.22		
		.0	-4.99	2.09
		.4	-5.01	.00
		.8	-5.04	-2.09
93				
	1	-44.55		
		.0	-4.95	2.07
		.4	-4.97	.00
		.8	-5.00	-2.07
94				
	1	-42.90		
		.0	-4.91	2.06
		.4	-4.93	.00
		.8	-4.96	-2.06
95				
	1	-41.26		
		.0	-4.87	2.04
		.4	-4.90	.00
		.8	-4.92	-2.04
96				
	1	-39.63		
		.0	-4.84	2.03
		.4	-4.86	.00
		.8	-4.89	-2.03
97				
	1	-38.01		
		.0	-4.81	2.01
		.4	-4.83	.00
		.8	-4.86	-2.01
98				
	1	-36.40		
		.0	-4.77	2.00

		.4	-4.60	.00
		.8	-4.62	-1.96
99				
	1	-34.81		
		.0	-4.74	1.99
		.4	-4.77	.00
		.8	-4.79	-1.99
100				
	1	-33.22		
		.0	-4.71	1.97
		.4	-4.74	.00
		.8	-4.76	-1.98
101				
	1	-31.64		
		.0	-4.69	1.96
		.4	-4.71	.00
		.8	-4.74	-1.96
102				
	1	-30.08		
		.0	-4.66	1.95
		.4	-4.68	.00
		.8	-4.71	-1.95
103				
	1	-28.52		
		.0	-4.63	1.94
		.4	-4.66	.00
		.8	-4.68	-1.94
104				
	1	-26.97		
		.0	-4.61	1.93
		.4	-4.64	.00
		.8	-4.66	-1.93
105				
	1	-25.42		
		.0	-4.59	1.92
		.4	-4.61	.00
		.8	-4.64	-1.92
106				
	1	-23.89		
		.0	-4.57	1.91
		.4	-4.59	.00
		.8	-4.62	-1.92
107				
	1	-22.36		
		.0	-4.55	1.90
		.4	-4.57	.00
		.8	-4.60	-1.91
108				
	1	-20.83		
		.0	-4.53	1.90
		.4	-4.55	.00
		.8	-4.58	-1.90
109				
	1	-19.32		
		.0	-4.51	1.89

		.4	-4.54	.00
		.8	-4.58	-1.89
110				
	1	-17.81		
		.0	-4.50	1.86
		.4	-4.52	.00
		.8	-4.55	-1.89
111				
	1	-16.30		
		.0	-4.48	1.88
		.4	-4.51	.00
		.8	-4.53	-1.88
112				
	1	-14.80		
		.0	-4.47	1.87
		.4	-4.49	.00
		.8	-4.52	-1.88
113				
	1	-13.30		
		.0	-4.46	1.86
		.4	-4.48	.00
		.8	-4.51	-1.87
114				
	1	-11.81		
		.0	-4.44	1.86
		.4	-4.47	.00
		.8	-4.49	-1.87
115				
	1	-10.32		
		.0	-4.42	1.85
		.4	-4.45	.00
		.8	-4.47	-1.85
116				
	1	-8.83		
		.0	-4.39	1.86
		.4	-4.42	.02
		.8	-4.44	-1.82
117				
	1	-7.35		
		.0	-4.38	1.83
		.4	-4.41	.06
		.8	-4.43	-1.78
118				
	1	-5.86		
		.0	-4.49	1.92
		.4	-4.52	.04
		.8	-4.54	-1.84
119				
	1	-4.38		
		.0	-4.88	1.86
		.4	-4.91	-.18
		.8	-4.93	-2.23
120				
	1	-2.90		
		.0	-5.44	1.46

		.4	-5.46	-.81
		.8	-5.49	-3.09
121				
	1	-1.44		
		.0	-4.90	.55
		.4	-4.93	-1.50
		.8	-4.95	-3.55

PROGRAM:SAP90/FILE:PRAM.SO
PORTAL PIER ARAH MEMANJANG

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	R(Z)
1	,000000	,000000	,000000
2	,000000	,000000	,000000
3	,000000	,000000	,000000
4	,000000	,000000	,000000
5	,000000	,000000	,000000
6	,000000	,000000	,000000
7	,000000	,000000	,000000
8	,000000	,000000	,000000
9	,000000	,000000	,000000
10	,000000	,000000	,000000
11	,000000	,000000	,000000
12	,000000	,000000	,000000
13	,000000	,000000	,000000
14	,000000	,000000	,000000
15	,000000	,000000	,000000
16	,000000	,000000	,000000
17	,000000	,000000	,000000
18	,000000	,000000	,000000
19	,000000	,000000	,000000
20	,000000	,000000	,000000
21	,000000	,000000	,000000
22	,000000	,000000	,000000
23	,000000	,000000	,000000
24	,000000	,000000	,000000
25	,000000	,000000	,000000
26	,000000	,000000	,000000
27	,000000	,000000	,000000
28	,000000	,000000	,000000
29	,000000	,000000	,000000
30	,000000	,000000	,000000
31	,000000	,000000	,000000
32	,000000	,000000	,000000
33	,000000	,000000	,000000
34	,000000	,000000	,000000
35	,000000	,000000	,000000
36	,000000	,000000	,000000
37	,000000	,000000	,000000
38	,000000	,000000	,000000
39	,000000	,000000	,000000
40	,000000	,000000	,000000
41	,000000	,000000	,000000
42	,000000	,000000	,000000
43	,000000	,000000	,000000
44	,000000	,000000	,000000
45	,000000	,000000	,000000
46	,000000	,000000	,000000

47	,000000	,000000	,000000
48	,000000	,000000	,000000
49	,000000	,000000	,000000
50	,000000	,000000	,000000
51	,000000	,000000	,000000
52	,000000	,000000	,000000
53	,000000	,000000	,000000
54	,000000	,000000	,000000
55	,000000	,000000	,000000
56	,000000	,000000	,000000
57	,000000	,000000	,000000
58	,000000	,000000	,000000
59	,000000	,000000	,000000
60	,000000	,000000	,000000
61	,000000	,000000	,000000
62	,009658	,000063	-,000124
63	,009534	,000005	-,000054
64	,009412	-,000009	-,000017
65	,009293	-,000007	-,000008
66	,009176	-,000003	-,000010
67	,009062	-,000001	-,000012
68	,008951	-,000001	-,000013
69	,008842	-,000001	-,000013
70	,008736	-,000001	-,000013
71	,008632	-,000001	-,000013
72	,008531	-,000001	-,000012
73	,008432	-,000001	-,000012
74	,008336	-,000001	-,000012
75	,008242	-,000001	-,000012
76	,008150	-,000001	-,000012
77	,008061	-,000001	-,000012
78	,007974	-,000001	-,000012
79	,007889	-,000001	-,000011
80	,007807	-,000001	-,000011
81	,007727	-,000001	-,000011
82	,007649	-,000001	-,000011
83	,007573	-,000001	-,000011
84	,007499	-,000001	-,000011
85	,007428	-,000001	-,000011
86	,007358	-,000001	-,000011
87	,007291	-,000001	-,000011
88	,007226	-,000001	-,000011
89	,007163	-,000001	-,000010
90	,007102	-,000001	-,000010
91	,007043	-,000001	-,000010
92	,006986	-,000001	-,000010
93	,006931	-,000001	-,000010
94	,006878	-,000001	-,000010
95	,006827	-,000001	-,000010
96	,006777	-,000001	-,000010
97	,006730	-,000001	-,000010
98	,006685	-,000001	-,000010
99	,006642	-,000001	-,000010
100	,006600	-,000001	-,000010
101	,006561	-,000001	-,000010

102	,006523	-,000001	-,000005
103	,006487	-,000001	-,000005
104	,006453	-,000001	-,000005
105	,006421	-,000001	-,000005
106	,006391	-,000001	-,000005
107	,006362	-,000001	-,000007
108	,006336	-,000001	-,000008
109	,006311	-,000001	-,000009
110	,006288	-,000001	-,000009
111	,006267	-,000001	-,000009
112	,006247	-,000001	-,000009
113	,006230	-,000001	-,000009
114	,006214	-,000001	-,000008
115	,006200	-,000001	-,000009
116	,006188	-,000001	-,000009
117	,006177	-,000001	-,000008
118	,006168	,000001	-,000007
119	,006161	,000003	-,000006
120	,006156	,000004	-,000011
121	,006153	-,000005	-,000034
122	,006151	-,000044	-,000078

PROGRAM;SAP90/FILE:PPAM.SAP

PORTAL PIER ARAH MEMANJANG

R E A C T I O N S A N D S P R I N G F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	M(Z)
1	-2.2551	-7.6572	5.7000
2	-2.2669	-.7220	5.6946
3	-2.2602	1.0189	5.6590
4	-2.2367	.2572	5.5957
5	-2.2075	.2208	5.5227
6	-2.1786	.1947	5.4527
7	-2.1513	.0936	5.3847
8	-2.1250	.1065	5.3192
9	-2.0996	.1224	5.2554
10	-2.0747	.1259	5.1931
11	-2.0504	.1238	5.1322
12	-2.0267	.1213	5.0728
13	-2.0035	.1191	5.0148
14	-1.9809	.1173	4.9583
15	-1.9589	.1156	4.9032
16	-1.9374	.1140	4.8495
17	-1.9165	.1124	4.7971
18	-1.8962	.1107	4.7462
19	-1.8764	.1091	4.6966
20	-1.8571	.1075	4.6483
21	-1.8383	.1059	4.6014
22	-1.8201	.1043	4.5558
23	-1.8024	.1028	4.5115
24	-1.7852	.1013	4.4685
25	-1.7685	.0997	4.4267
26	-1.7524	.0982	4.3863
27	-1.7367	.0967	4.3471
28	-1.7215	.0952	4.3091
29	-1.7069	.0938	4.2724
30	-1.6927	.0923	4.2368
31	-1.6790	.0908	4.2025
32	-1.6658	.0894	4.1694
33	-1.6530	.0880	4.1375
34	-1.6407	.0866	4.1068
35	-1.6289	.0852	4.0773
36	-1.6175	.0838	4.0489
37	-1.6067	.0824	4.0217
38	-1.5963	.0811	3.9956
39	-1.5863	.0797	3.9707
40	-1.5768	.0783	3.9469
41	-1.5678	.0770	3.9242
42	-1.5592	.0756	3.9027
43	-1.5510	.0743	3.8823
44	-1.5433	.0730	3.8629
45	-1.5360	.0717	3.8447
46	-1.5292	.0704	3.8276
47	-1.5228	.0691	3.8116

48	-1.5168	.0478	3.7947
49	-1.5113	.0464	3.7879
50	-1.5062	.0448	3.7701
51	-1.5015	.0431	3.7584
52	-1.4977	.0418	3.7478
53	-1.4935	.0436	3.7382
54	-1.4900	.0716	3.7297
55	-1.4871	.0815	3.7224
56	-1.4850	.0690	3.7167
57	-1.4839	-.0613	3.7131
58	-1.4829	-.3396	3.7101
59	-1.4785	-.5037	3.7017
60	-1.4634	.5871	3.6759
61	-1.4367	4.9507	3.6310
62	106.8790	.0000	.0000
63	-.1208E-11	.0000E+00	.0000E+00
64	.2657E-11	.0000E+00	.0000E+00
65	-.1890E-11	.0000E+00	.0000E+00
66	.1009E-11	.0000E+00	.0000E+00
67	.1307E-11	.0000E+00	.0000E+00
68	.0000	.0000	.0000
69	.0000	.0000	.0000
70	.0000	.0000	.0000
71	-.1876E-11	.0000E+00	.0000E+00
72	.2061E-11	.0000E+00	.0000E+00
73	.0000	.0000	.0000
74	.0000	.0000	.0000
75	.0000	.0000	.0000
76	.1194E-11	.0000E+00	.0000E+00
77	-.2004E-11	.0000E+00	.0000E+00
78	.3752E-11	.0000E+00	.0000E+00
79	.0000	.0000	.0000
80	.0000	.0000	.0000
81	.1677E-11	.0000E+00	.0000E+00
82	.0000	.0000	.0000
83	.0000	.0000	.0000
84	.1677E-11	.0000E+00	.0000E+00
85	.0000	.0000	.0000
86	.0000	.0000	.0000
87	.1450E-11	.0000E+00	.0000E+00
88	.0000	.0000	.0000
89	.0000	.0000	.0000
90	.0000	.0000	.0000
91	.2217E-11	.0000E+00	.0000E+00
92	.0000	.0000	.0000
93	.0000	.0000	.0000
94	.0000	.0000	.0000
95	.0000	.0000	.0000
96	-.1236E-11	.0000E+00	.0000E+00
97	.0000	.0000	.0000
98	.0000	.0000	.0000
99	.0000	.0000	.0000
100	.1251E-11	.0000E+00	.0000E+00
101	.1414E-11	.0000E+00	.0000E+00
102	.0000	.0000	.0000

103	.0000	.0000	.0000
104	.0000	.0000	.0000
105	.0000	.0000	.0000
106	-.1172E-11	.0000E+00	.0000E+00
107	.0000	.0000	.0000
108	-.1162E-11	.0000E+00	.0000E+00
109	.0000	.0000	.0000
110	.0000	.0000	.0000
111	.0000	.0000	.0000
112	.0000	.0000	.0000
113	.0000	.0000	.0000
114	.0000	.0000	.0000
115	-.2533E-11	.0000E+00	.0000E+00
116	.0000	.0000	.0000
117	.0000	.0000	.0000
118	.0000	.0000	.0000
119	.0000	.0000	.0000
120	.0000	.0000	.0000
121	.0000	.0000	.0000
122	.0000	.0000	.0000
TOTAL	.2198E-13	.3032E+01	.2676E+03

PROGRAM:SAP90/FILE:PPML.F3F
PORTAL PIER ARAH MELINTANG

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	AXIAL FORCE	DIST FNDT	1-2 PLANE SHEAR	1-2 PLANE MOMENT
1					
	1-20122.12				
			.0	-2731.15	1743.23
			2.5	-2731.15	-5084.65
			5.0	-2731.15	-11910.54
2					
	1-51860.20				
			.0	3698.21	-8768.17
			2.5	3698.21	477.36
			5.0	3698.21	9722.89
3					
	1-47355.08				
			.0	2275.76	-6216.43
			2.5	2275.76	-537.04
			5.0	2275.76	5162.36
4					
	1-48191.80				
			.0	2337.16	-6152.09
			2.5	2337.16	-309.18
			5.0	2337.16	5533.73
5					
	1-48031.15				
			.0	2138.96	-5669.73
			2.5	2138.96	-322.33
			5.0	2138.96	5025.07
6					
	1-48057.17				
			.0	2005.76	-5309.15
			2.5	2005.76	-294.75
			5.0	2005.76	4719.65
7					
	1-48048.57				
			.0	1875.81	-4966.59
			2.5	1875.81	-277.05
			5.0	1875.81	4412.48
8					
	1-48046.69				
			.0	1759.67	-4658.80
			2.5	1759.67	-259.64
			5.0	1759.67	4139.53
9					
	1-48043.73				
			.0	1654.46	-4380.31
			2.5	1654.46	-244.16
			5.0	1654.46	3891.99
10					
	1-48041.35				
			.0	1559.85	-4129.87

		2.5	1559.85	-230.33
		5.0	1559.85	7669.40
11				
	1-48038.00			
		.0	1475.52	-3906.34
		2.5	1475.52	-217.54
		5.0	1475.52	3471.25
12				
	1-48040.54			
		.0	1399.05	-3705.19
		2.5	1399.05	-207.56
		5.0	1399.05	3290.06
13				
	1-48012.44			
		.0	1340.00	-3541.86
		2.5	1340.00	-191.86
		5.0	1340.00	3158.15
14				
	1-48148.99			
		.0	1244.24	-3325.76
		2.5	1244.24	-215.16
		5.0	1244.24	2895.44
15				
	1-47405.05			
		.0	1398.81	-3534.68
		2.5	1398.81	-37.66
		5.0	1398.81	3459.35
16				
	1-51376.83			
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		2.5	265.41	-942.26
		5.0	265.41	-278.73
17				
	1-21480.31			
		.0	6088.48	-11272.67
		2.5	6088.48	3948.54
		5.0	6088.48	19169.74
18				
	1-32517.15			
		.0	20122.12	-11912.54
		4.7	-3887.26	26137.91
		9.4	-27896.63	-48355.58
19				
	1-28818.94			
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		9.4	-24055.19	-39062.19
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	1-26543.18			
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		9.4	-24718.86	-40551.27
21				
	1-24206.02			
		.0	23472.93	-35017.54

	4.7	-574.44	18779.87
	9.4	-24547.87	-40044.57
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	1-22067.66		
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	1-20061.30		
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	4.7	-485.62	18780.81
	9.4	-24494.99	-39767.46
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	1-18185.48		
	.0	27553.58	-35355.01
	4.7	-455.79	18780.43
	9.4	-24465.17	-39628.06
25			
	1-16425.82		
	.0	27581.52	-35486.54
	4.7	-427.85	18777.87
	9.4	-24437.27	-39499.67
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	1-14771.36		
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	4.7	-402.88	18775.80
	9.4	-24412.25	-39384.66
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	1-13211.51		
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	4.7	-380.28	18774.16
	9.4	-24389.65	-39280.36
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	1-11735.99		
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	4.7	-361.02	18770.56
	9.4	-24370.40	-39193.70
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	1-10336.94		
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	1 -8996.94		
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